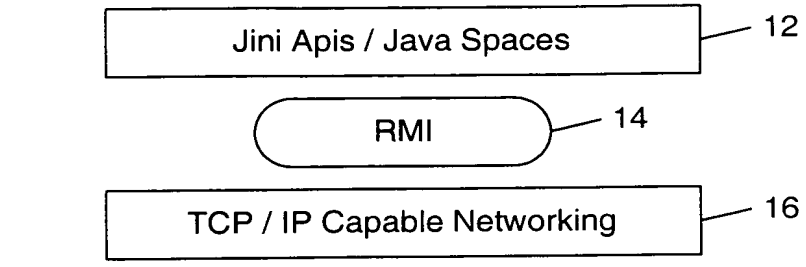


Fig. 1
(Prior Art)

Docket: 5050-4

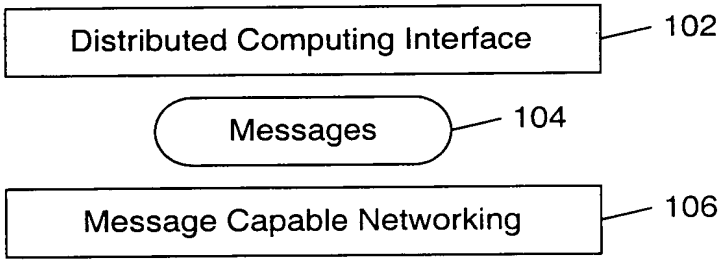


Fig. 2

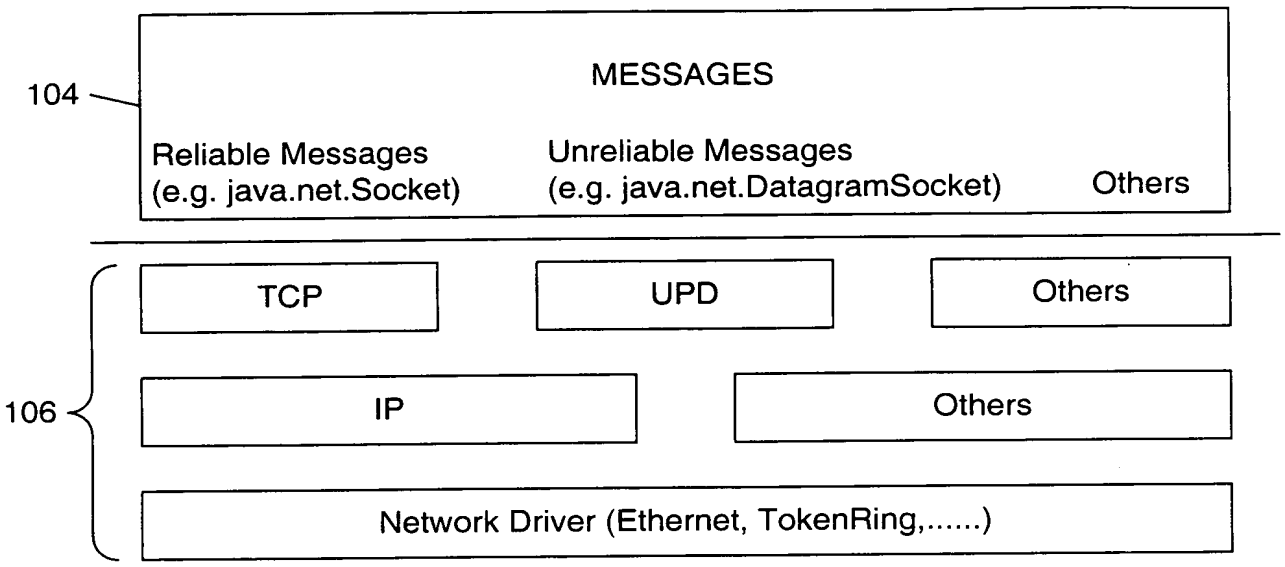

104
MESSAGES
Reliable Messages
(e.g. java.net.Socket)
Unreliable Messages
(e.g. java.net.DatagramSocket)
Others
106
TCP
UPD
Others
IP
Others
Network Driver (Ethernet, TokenRing,.....)

Fig. 3

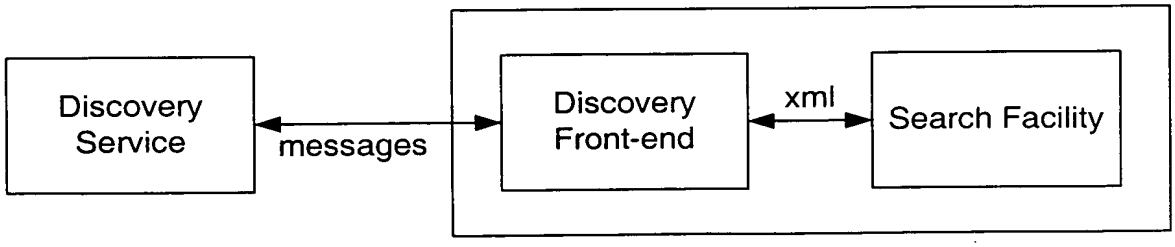

Discovery
Service
messages
Discovery
Front-end
xml
Search Facility

Fig. 4

DOCKET NO. 3768.0050

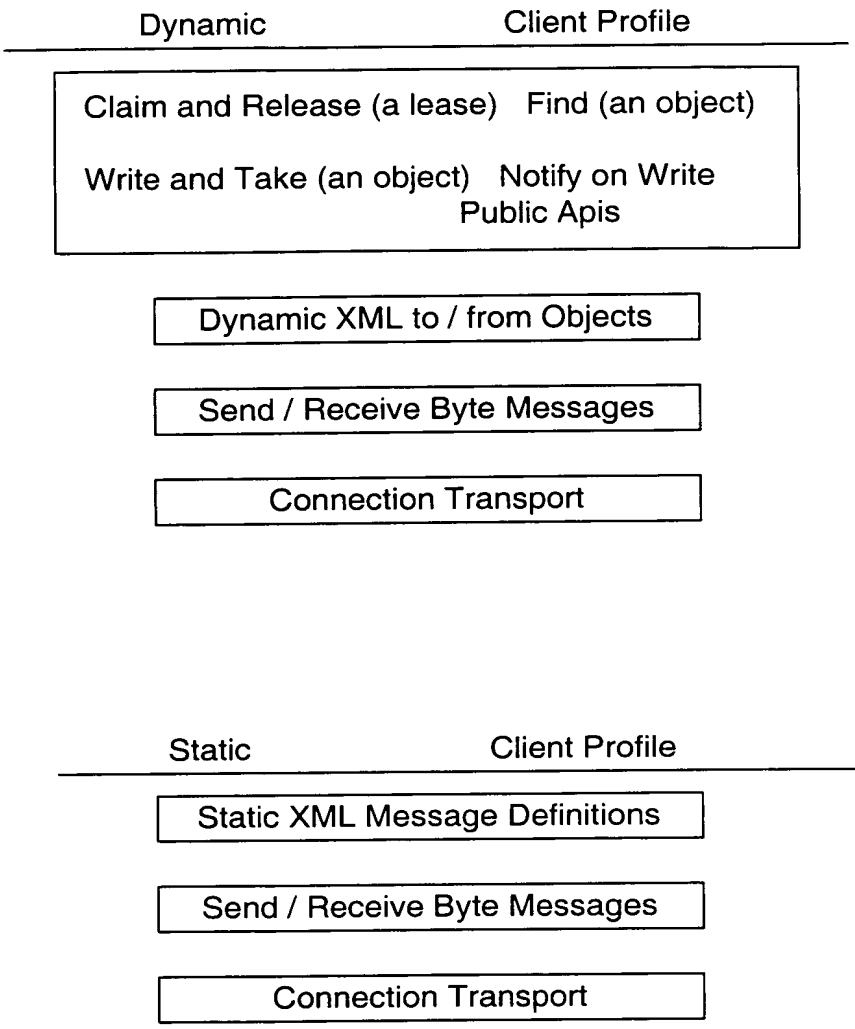


Fig. 5

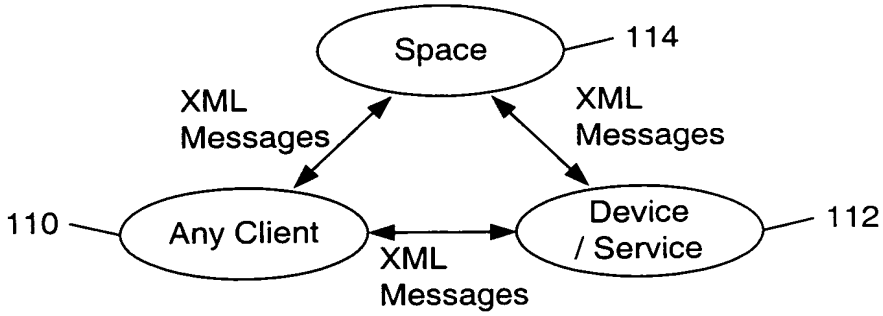

Space
114
XML
Messages
XML
Messages
110
Any Client
Device
/ Service
112
XML
Messages

Fig. 6

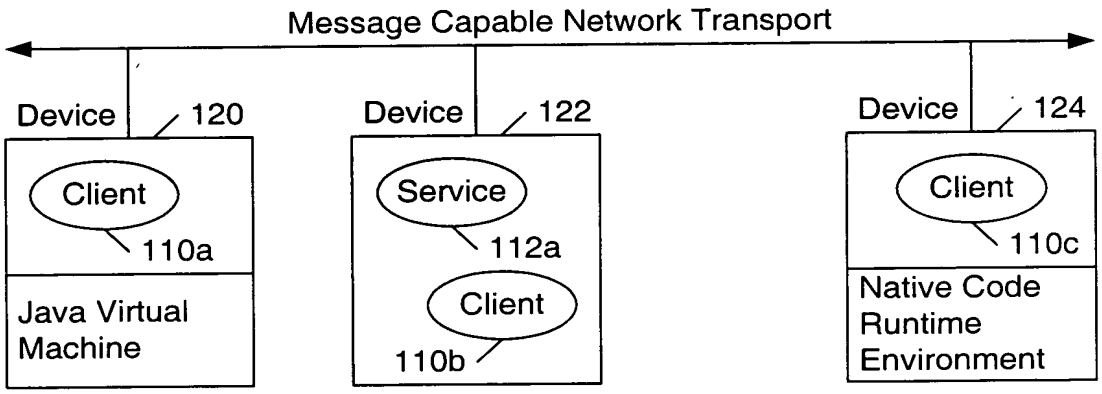

Message Capable Network Transport
Device
120
Client
110a
Java Virtual
Machine
Device
122
Service
112a
Client
110b
Device
124
Client
110c
Native Code
Runtime
Environment

Fig. 7

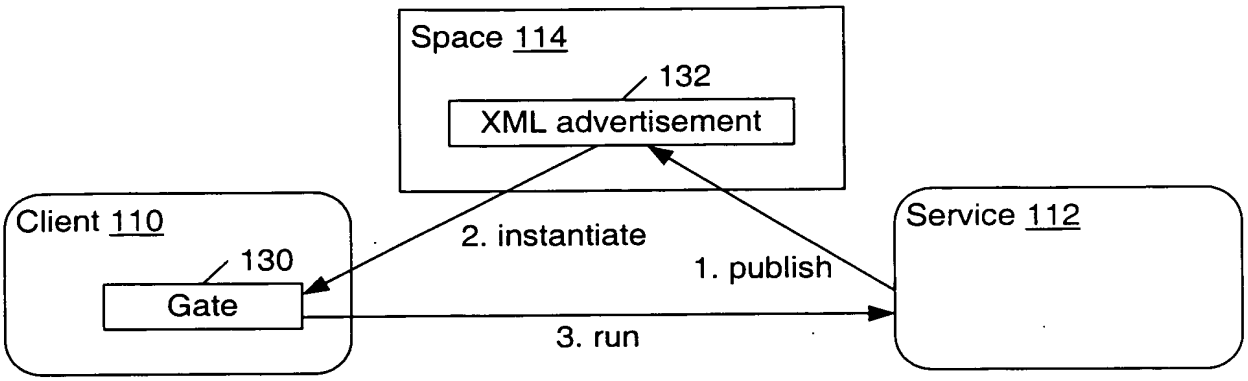

Space 114
132
XML advertisement
Client 110
130
Gate
2. instantiate
1. publish
Service 112
3. run

Fig. 8

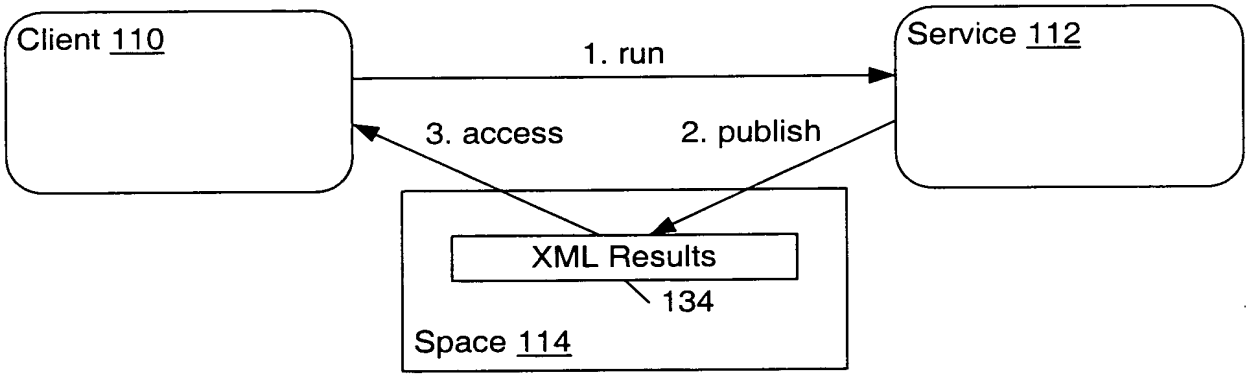

Client 110
1. run
Service 112
3. access
2. publish
XML Results
134
Space 114

Fig. 9

05603681.1601500

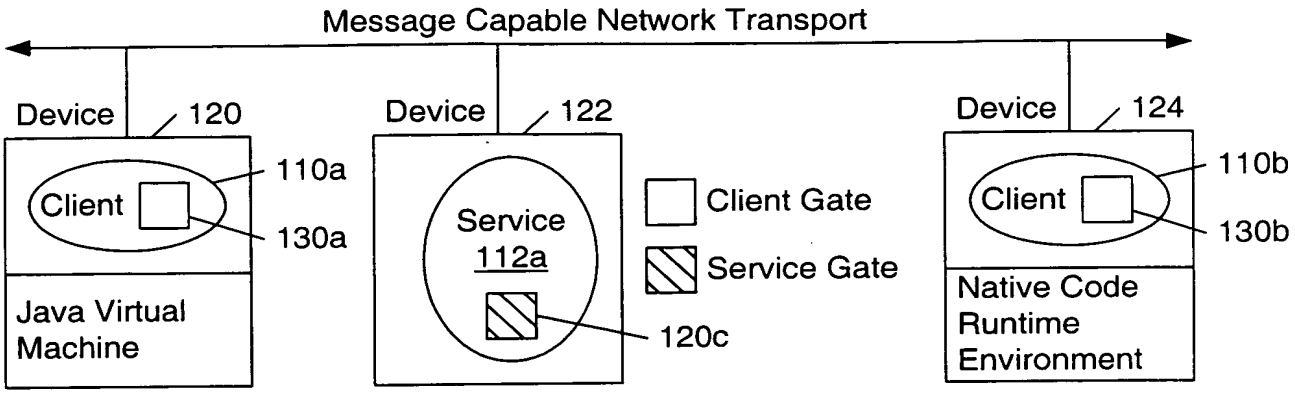


Fig. 10a

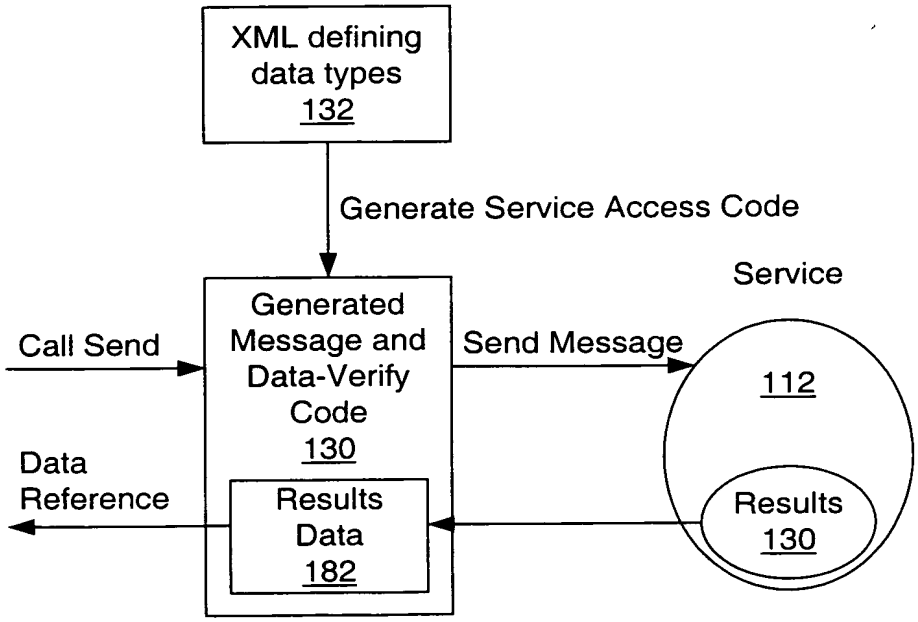


Fig. 10b

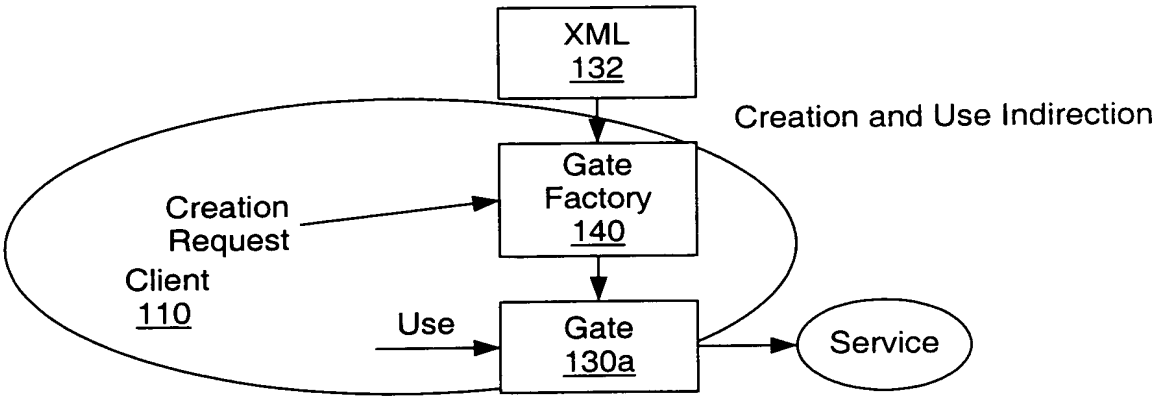


Fig. 11a

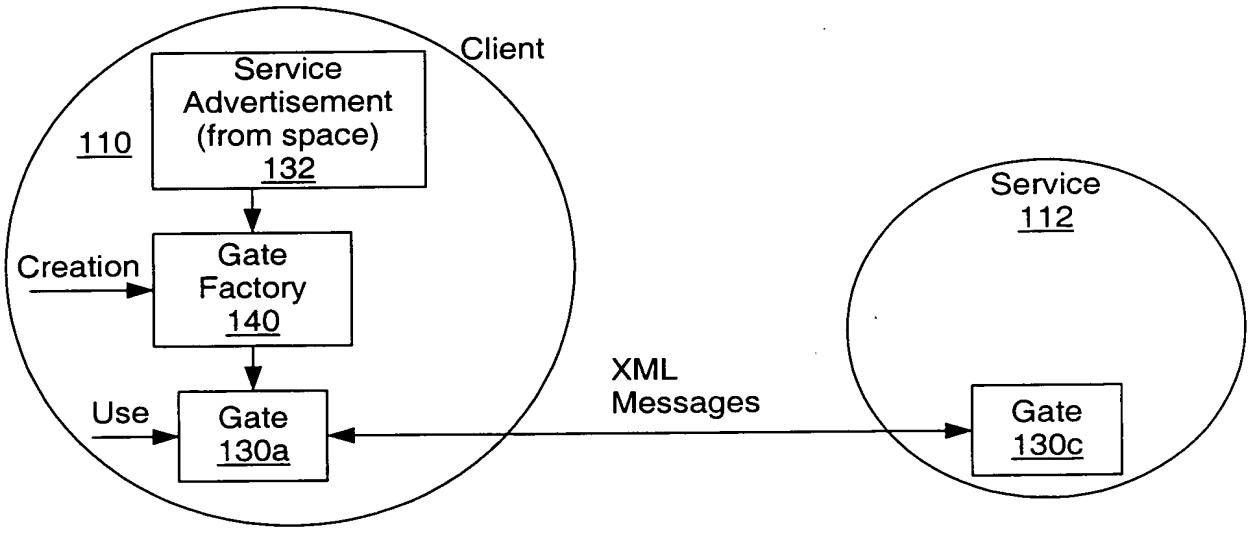


Fig. 11b

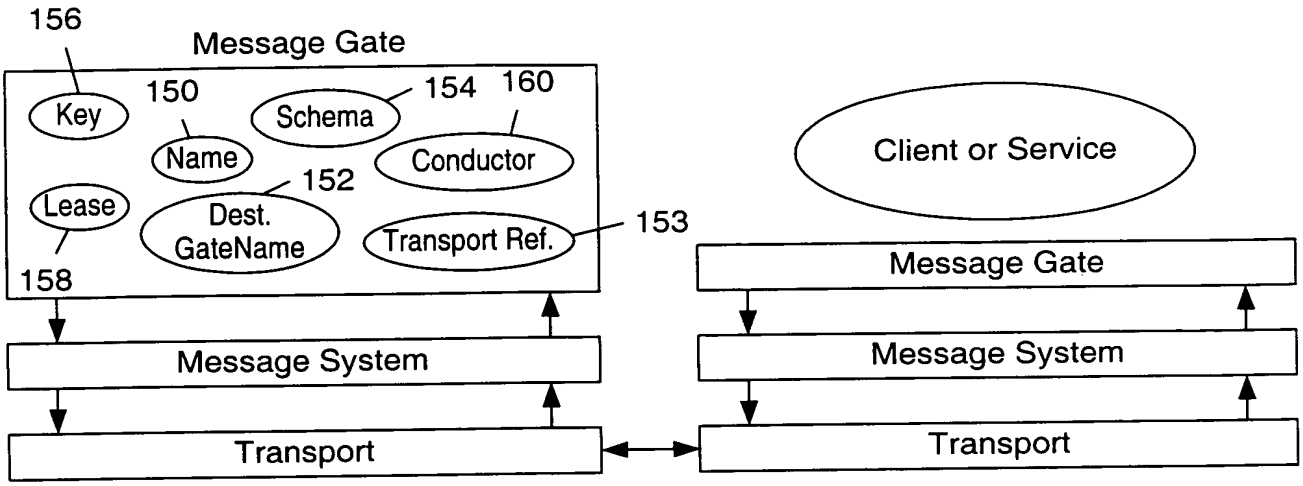

156
Message Gate
150
154
160
Key
Schema
Name
Conductor
152
Lease
Dest.
GateName
Transport Ref.
153
158
Client or Service
Message Gate
Message System
Transport
Message System
Transport

Fig. 12

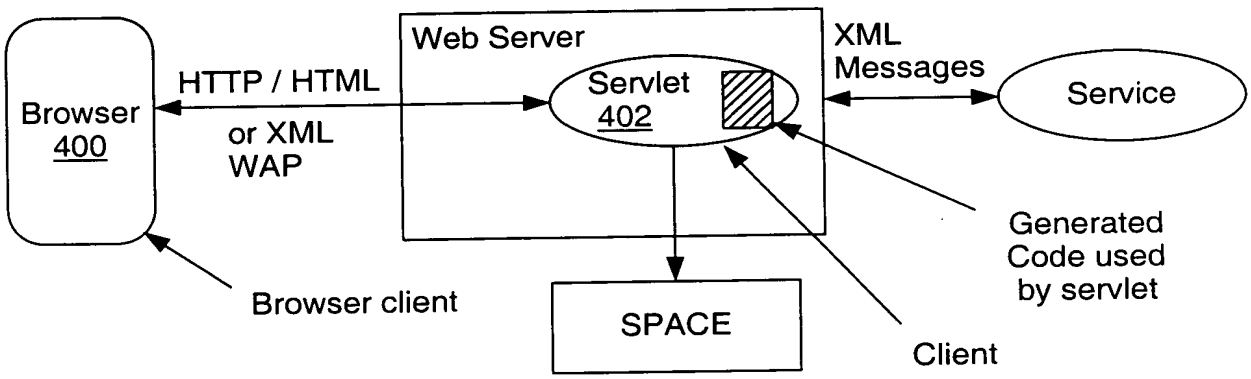

Web Server
XML
Messages
Browser
400
HTTP / HTML
or XML
WAP
Servlet
402
Service
Generated
Code used
by servlet
Browser client
SPACE
Client

Fig. 13

Docket: 4950.3

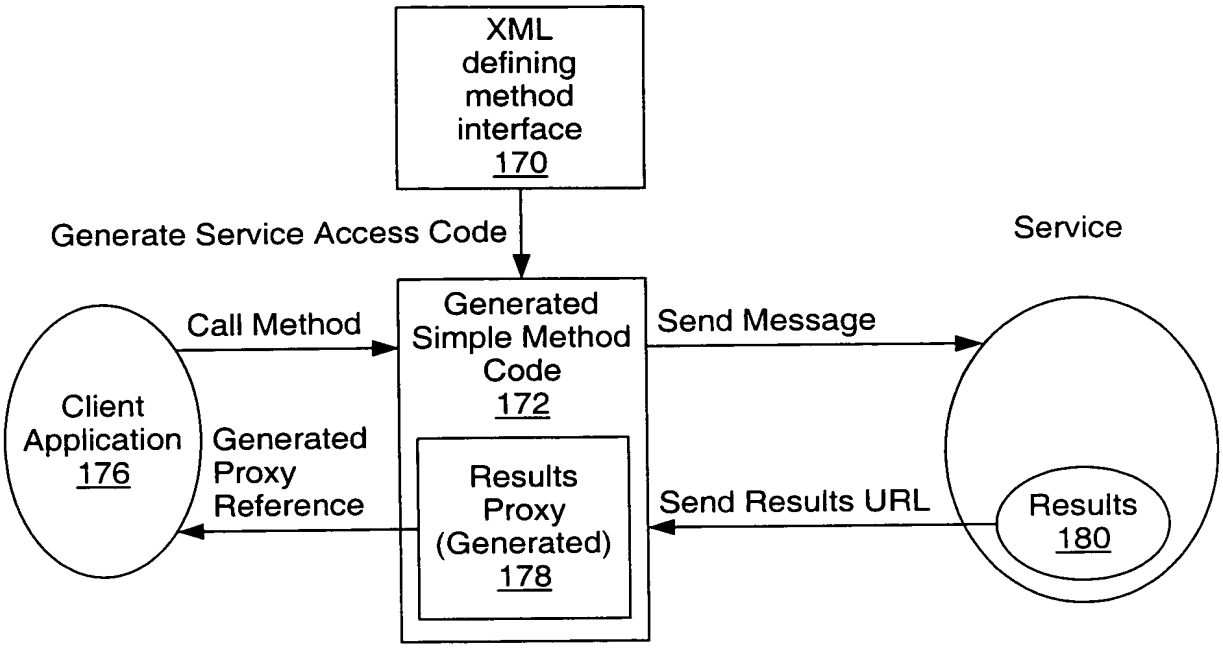


Fig. 14

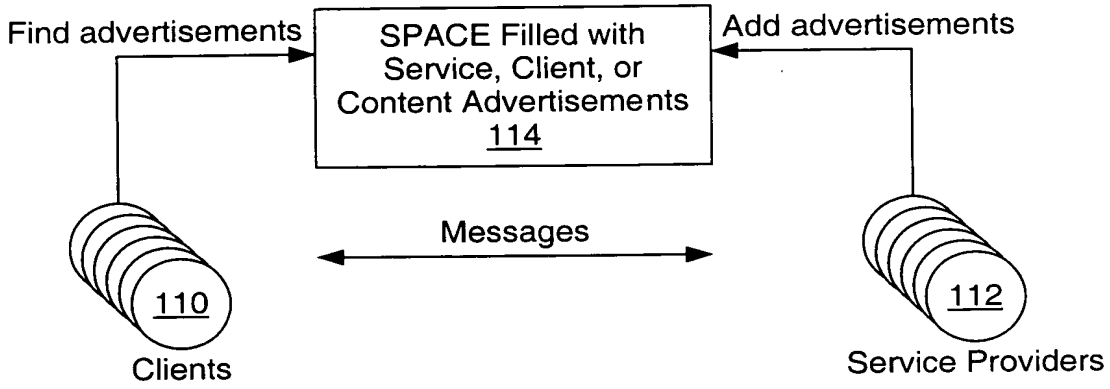


Fig. 15

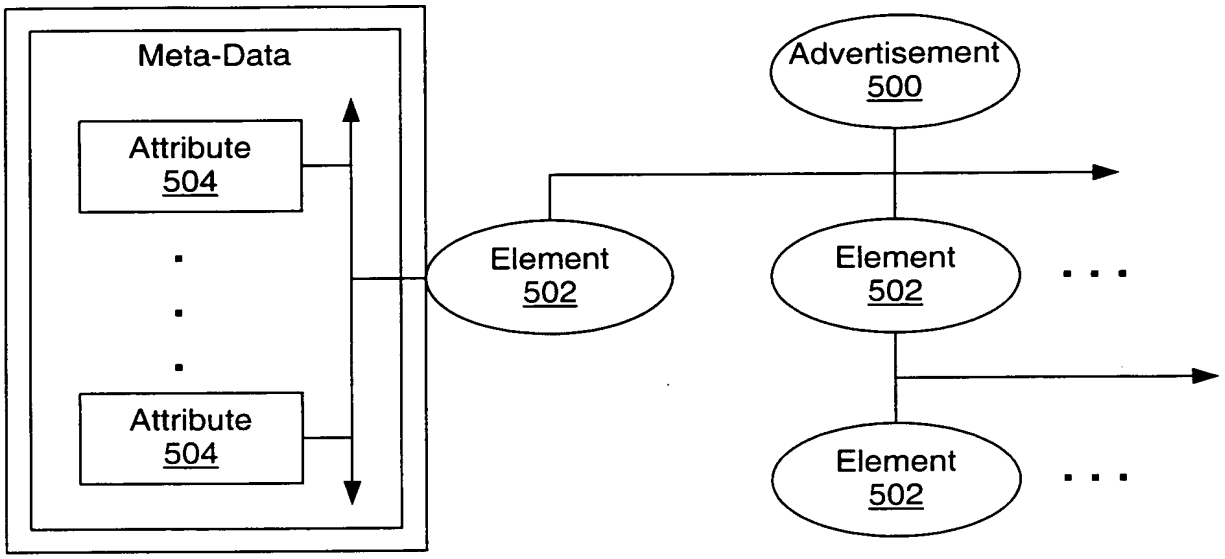

Meta-Data
Attribute
504
Attribute
504
Advertisement
500
Element
502
Element
502
Element
502

Fig. 16

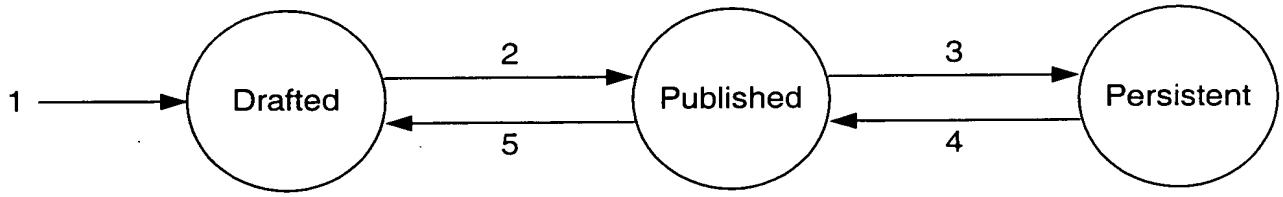

1
Drafted
2
5
Published
3
4
Persistent

Fig. 17

006T0T" T8966960

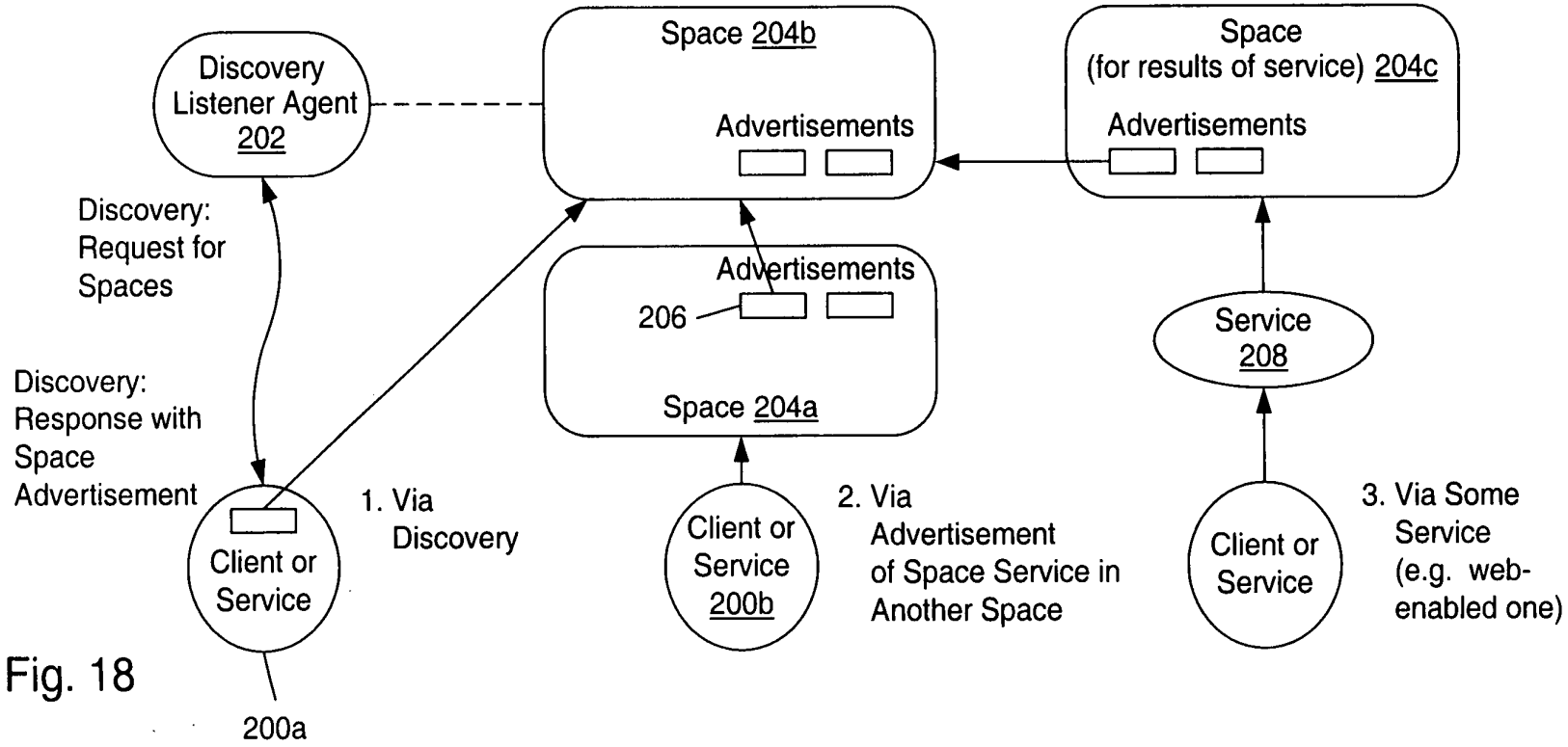


Fig. 18

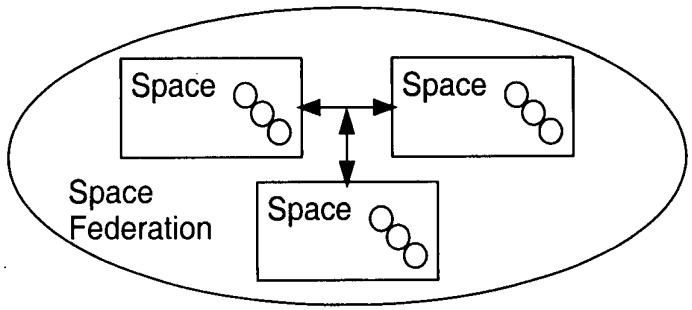


Fig. 19

0960-1783-0200

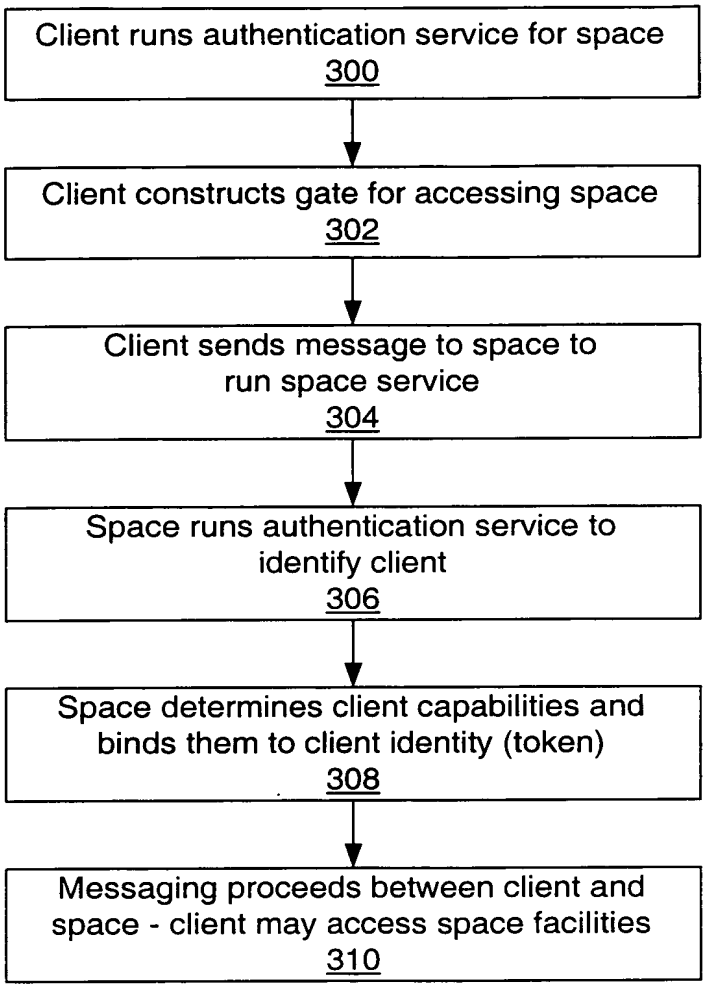


Fig. 20

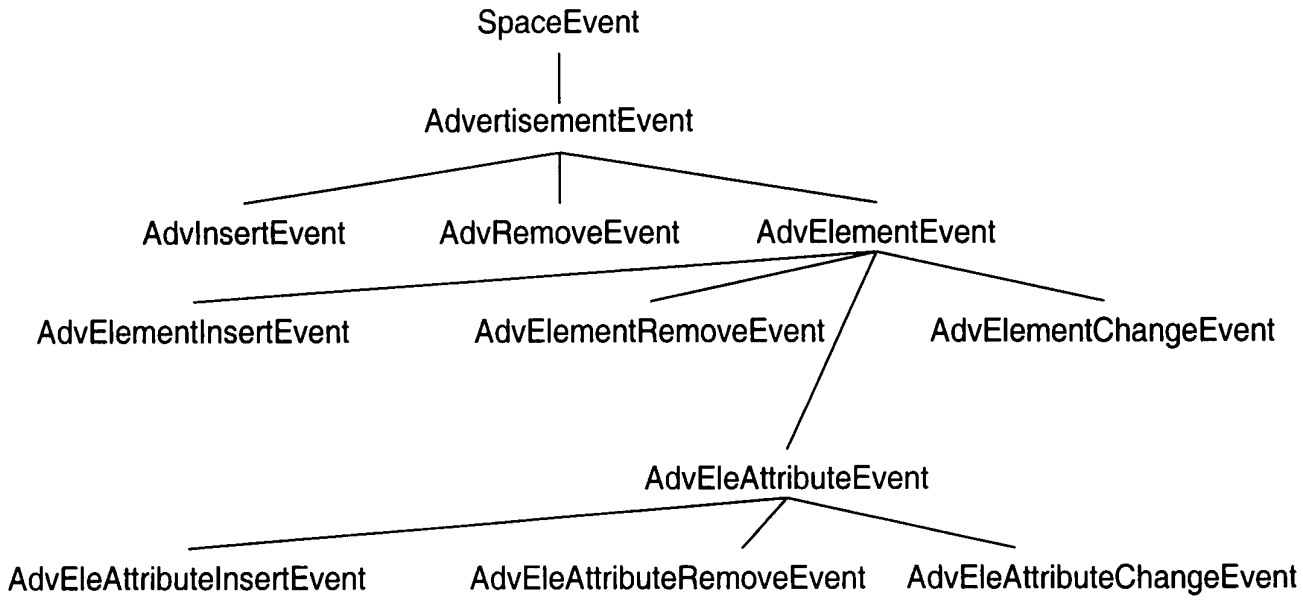

SpaceEvent
AdvertisementEvent
AdvInsertEvent
AdvRemoveEvent
AdvElementEvent
AdvElementInsertEvent
AdvElementRemoveEvent
AdvElementChangeEvent
AdvEleAttributeEvent
AdvEleAttributeInsertEvent
AdvEleAttributeRemoveEvent
AdvEleAttributeChangeEvent

Fig. 21

Docket No. 4500.003

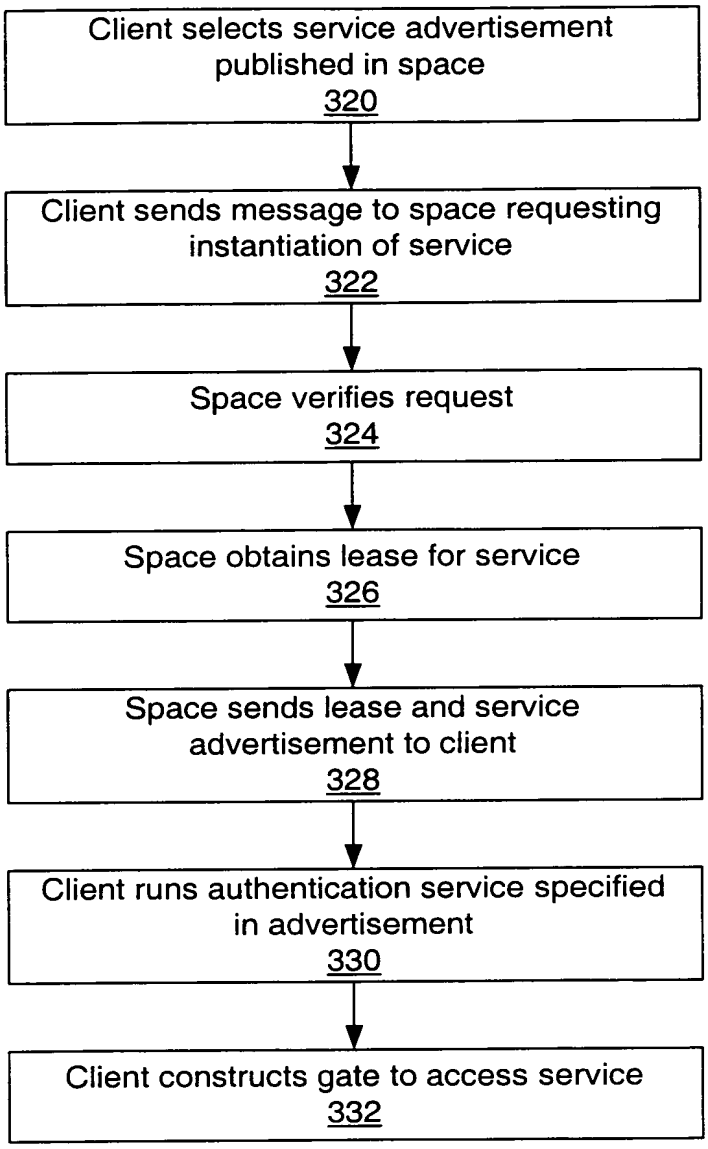


Fig. 22

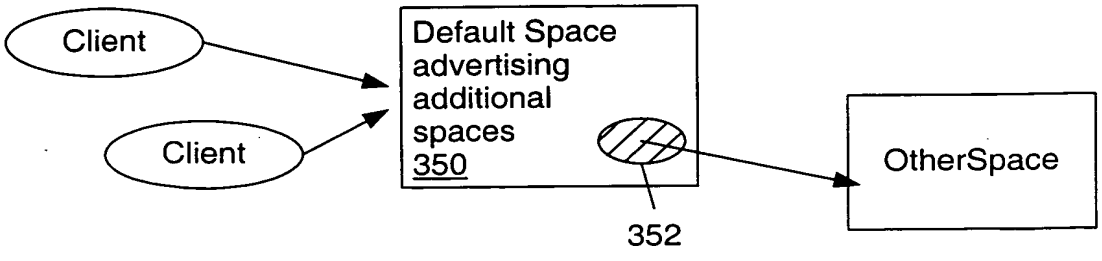


Fig. 23

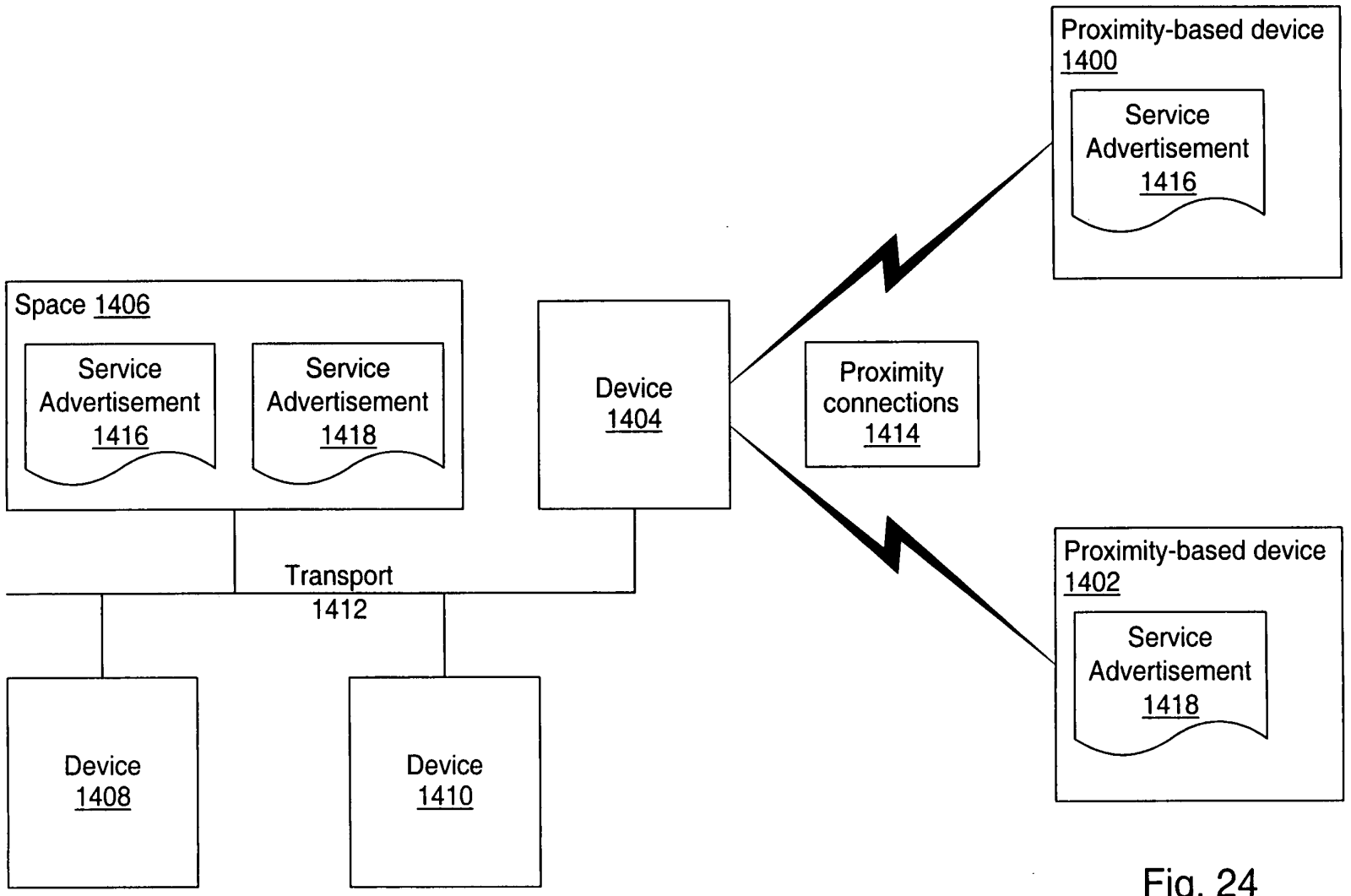

Proximity-based device
1400
Service
Advertisement
1416
Space 1406
Service
Advertisement
1416
Service
Advertisement
1418
Device
1404
Proximity
connections
1414
Transport
1412
Proximity-based device
1402
Service
Advertisement
1418
Device
1408
Device
1410

Fig. 24

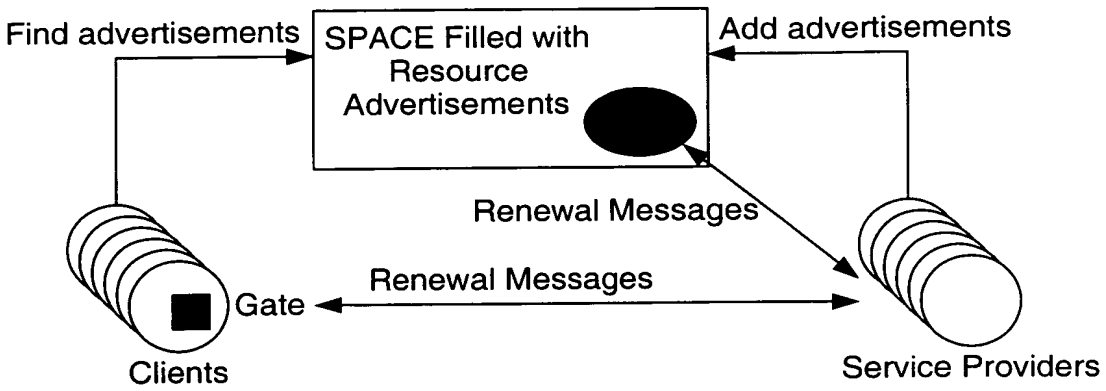

Find advertisements
SPACE Filled with
Resource
Advertisements
Add advertisements
Renewal Messages
Renewal Messages
Gate
Clients
Service Providers

Fig. 25

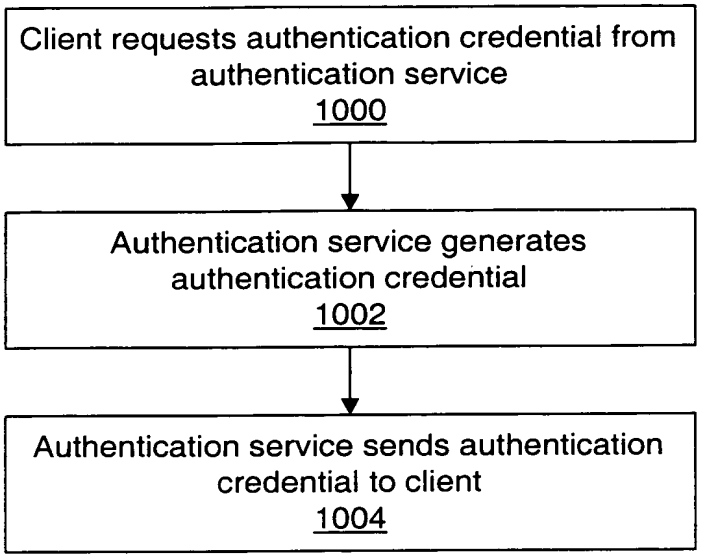


FIG. 26a

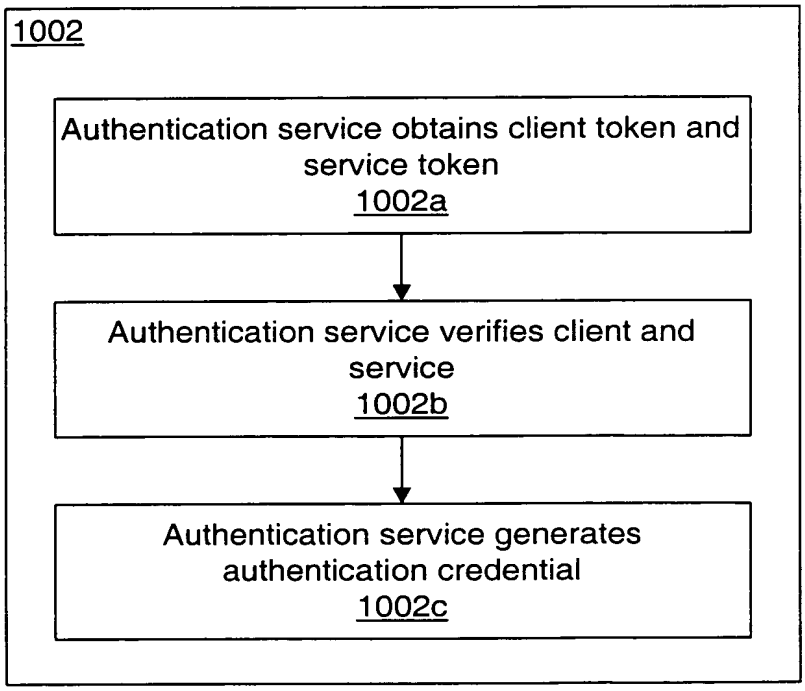


FIG. 26b

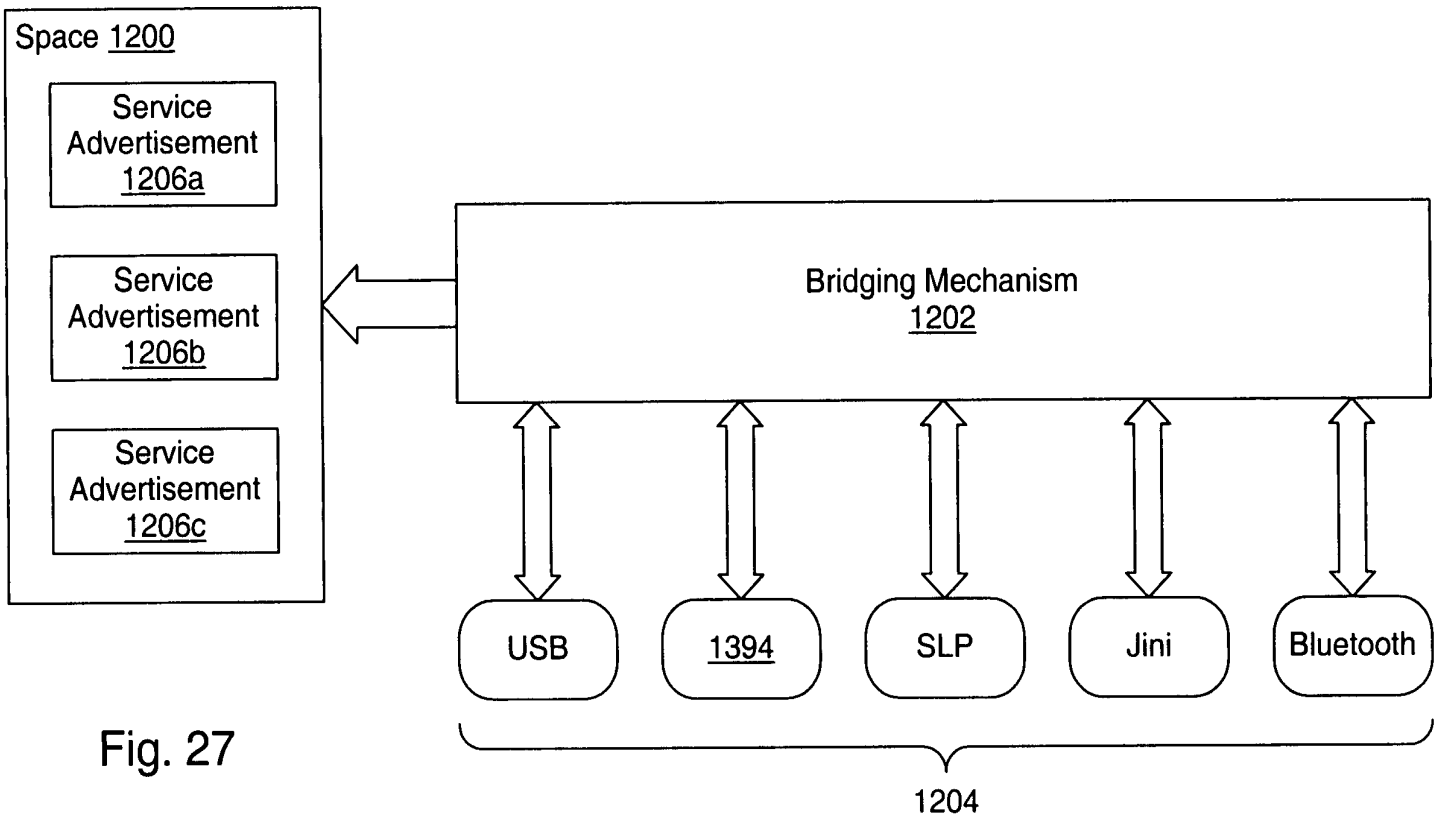

Space 1200
Service Advertisement 1206a
Service Advertisement 1206b
Service Advertisement 1206c
Bridging Mechanism 1202
USB
1394
SLP
Jini
Bluetooth
1204

Fig. 27

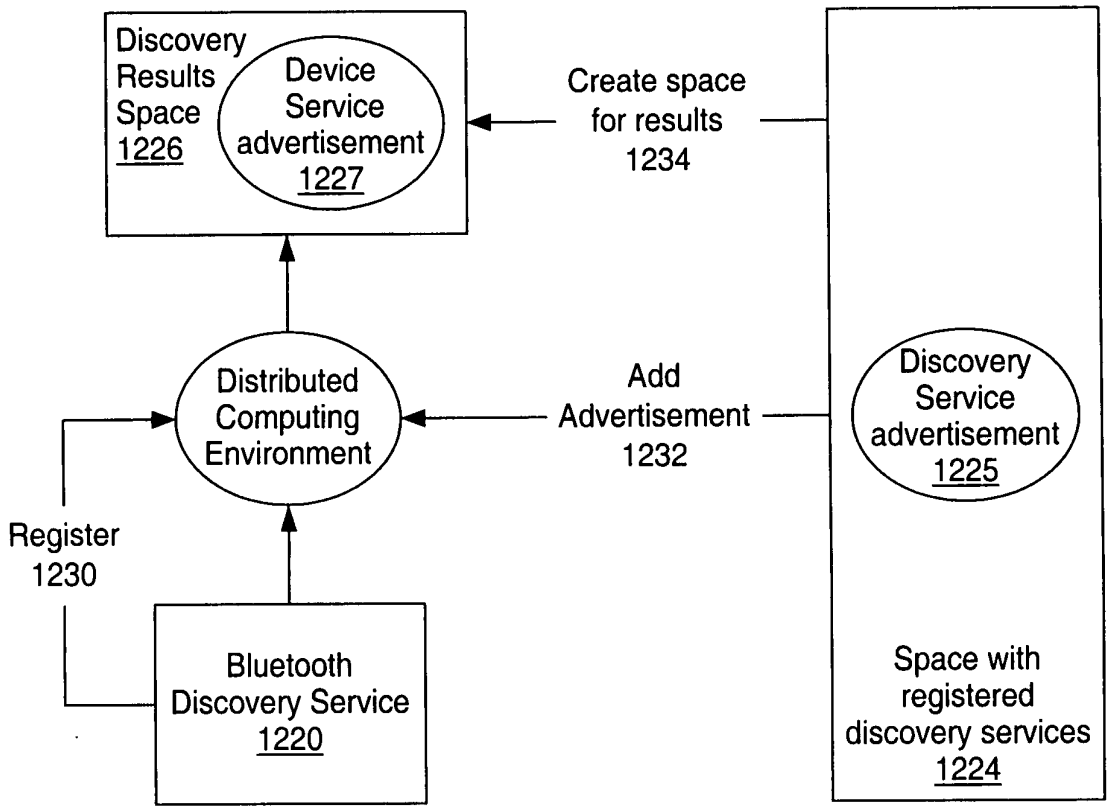
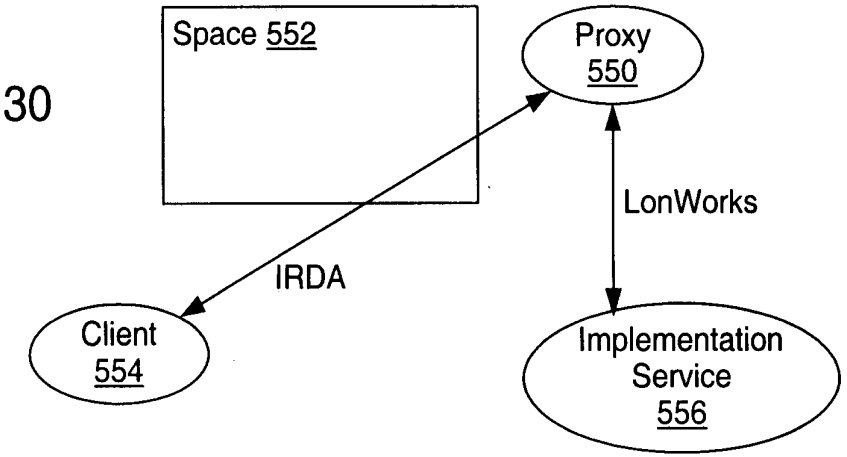

Discovery
Results
Space
1226
Device
Service
advertisement
1227
Create space
for results
1234
Distributed
Computing
Environment
Add
Advertisement
1232
Discovery
Service
advertisement
1225
Register
1230
Bluetooth
Discovery Service
1220
Space with
registered
discovery services
1224

Fig. 28

006TOT"T89E6960

Fig. 30



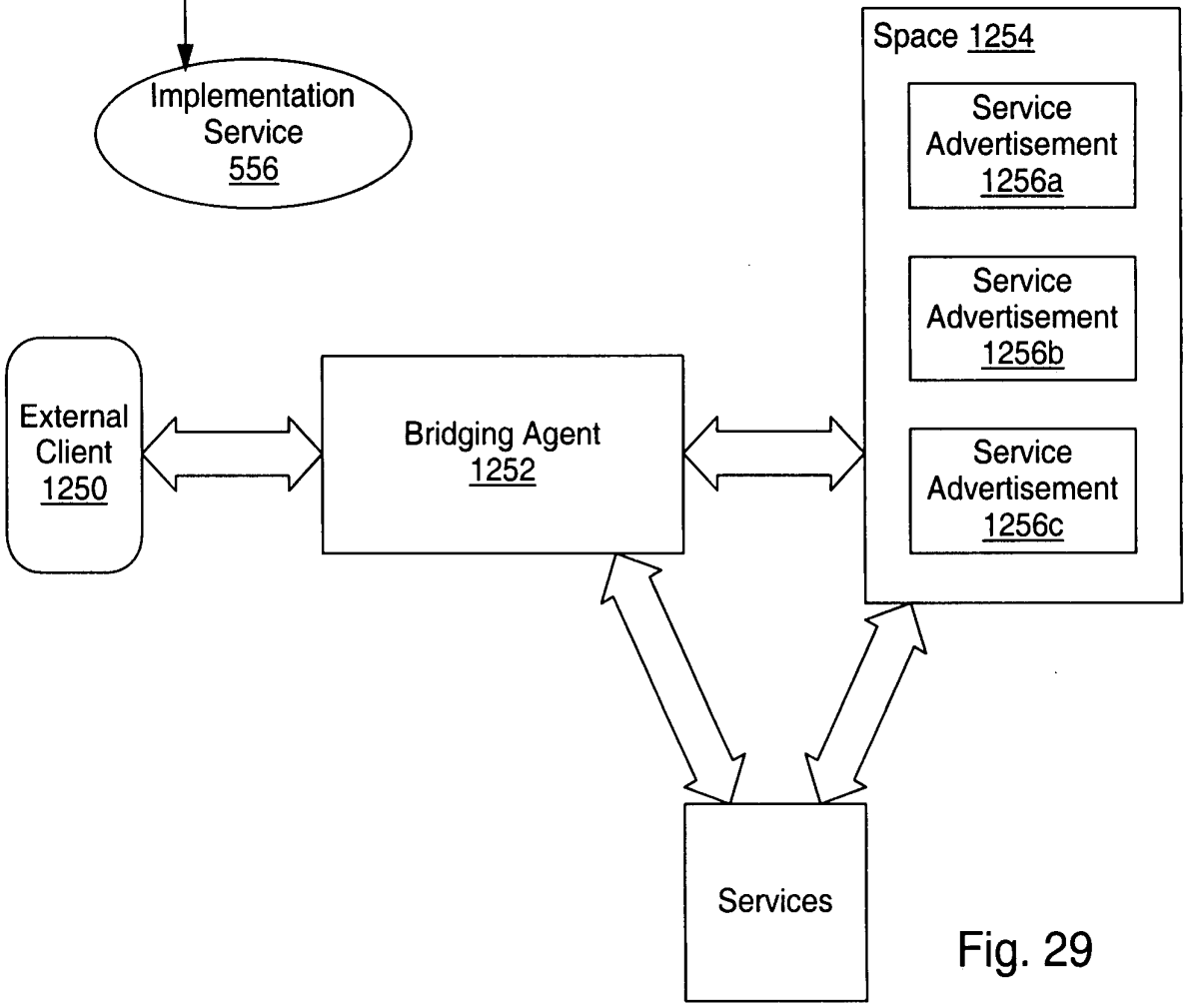


Fig. 29

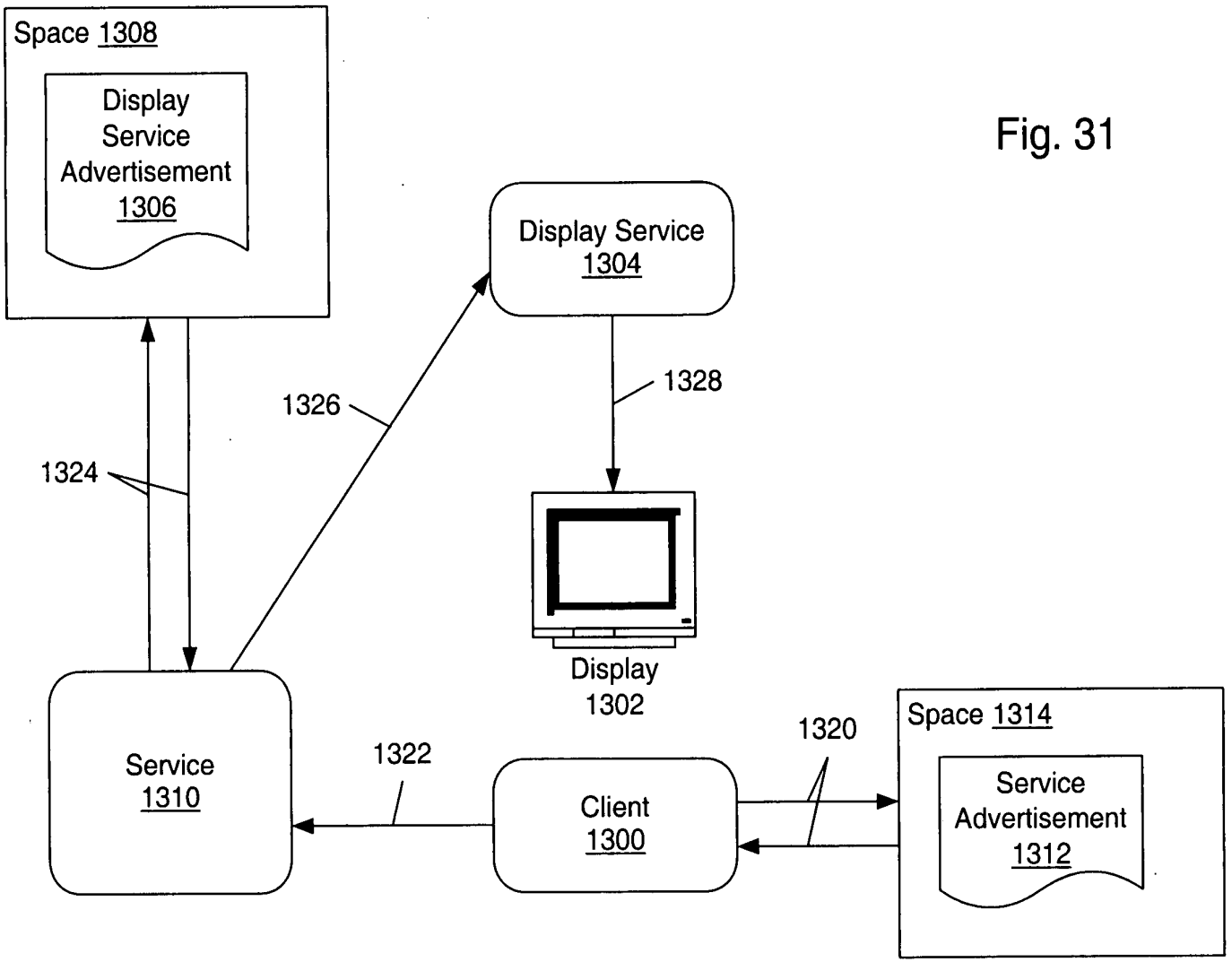

Space 1308
Display Service Advertisement 1306
Display Service 1304
1326
1328
1324
Display 1302
Service 1310
1322
Client 1300
1320
Space 1314
Service Advertisement 1312

Fig. 31

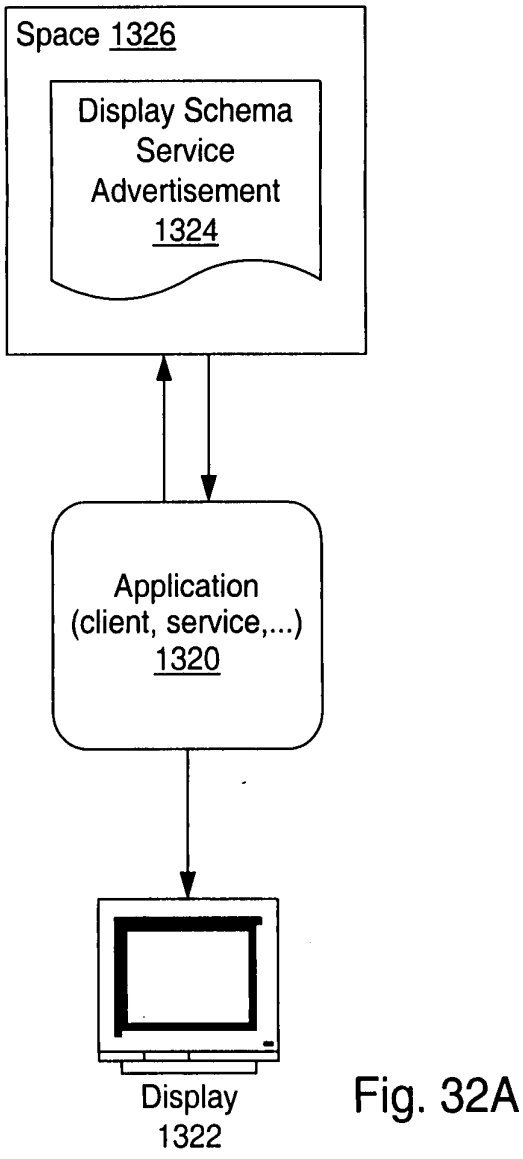


Fig. 32A

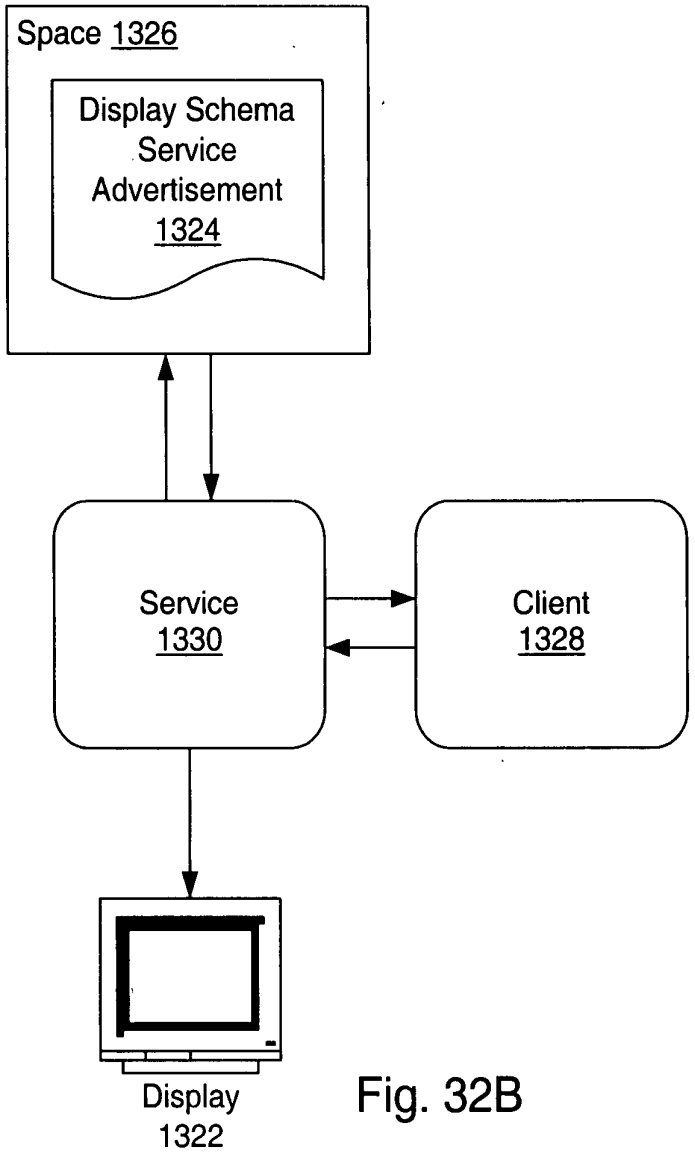


Fig. 32B

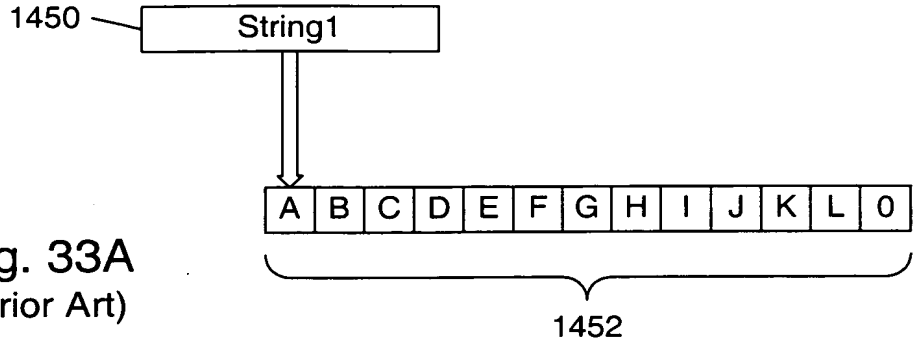


Fig. 33A
(Prior Art)

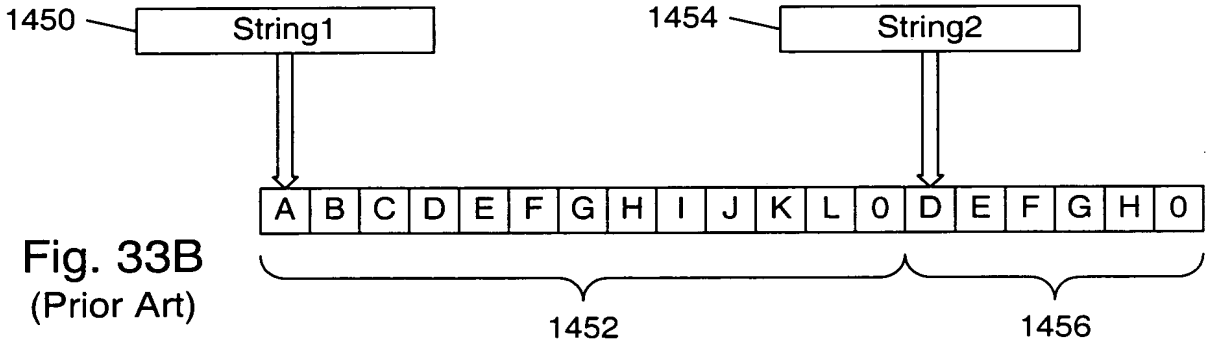


Fig. 33B
(Prior Art)

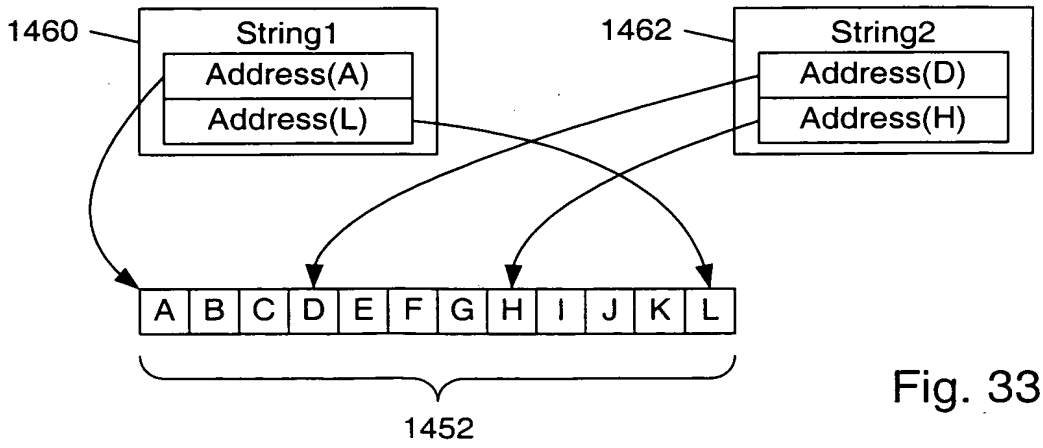


Fig. 33C

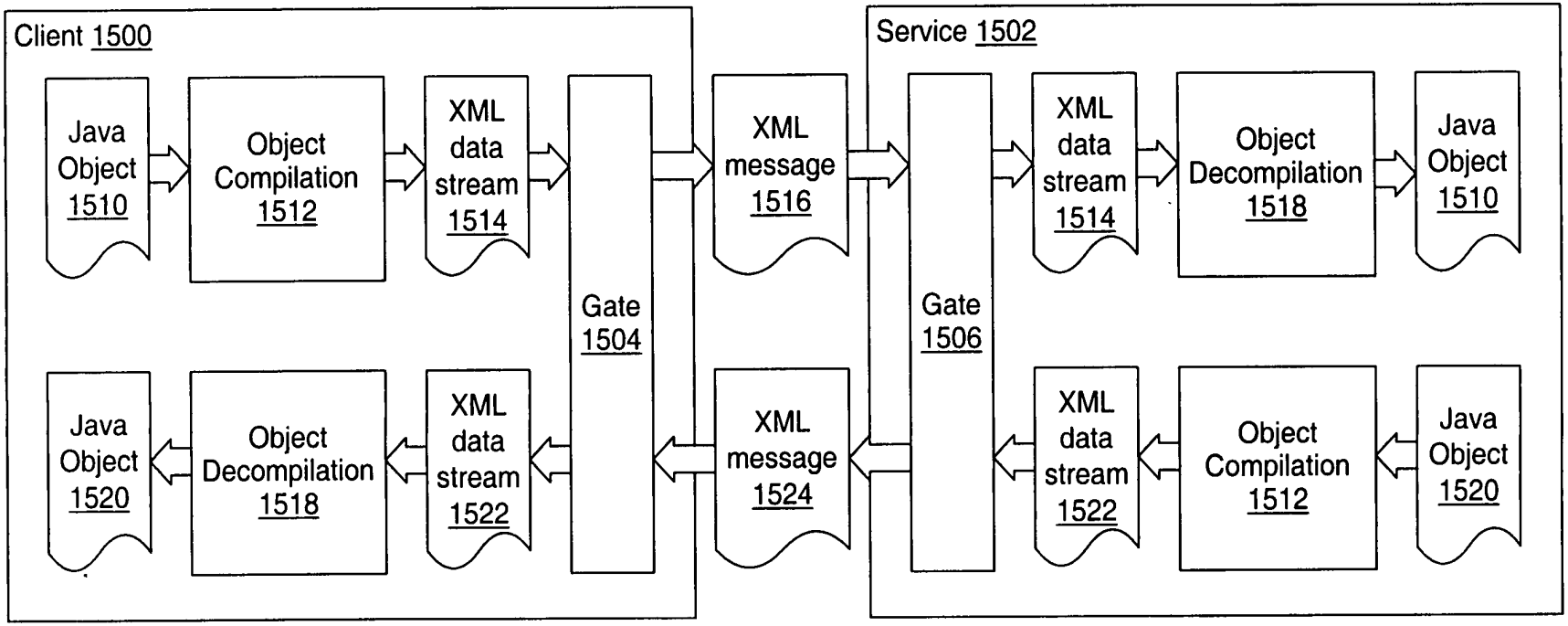

Client 1500
Java Object 1510
Object Compilation 1512
XML data stream 1514
Gate 1504
XML message 1516
Service 1502
Gate 1506
XML data stream 1514
Object Decompilation 1518
Java Object 1510
Java Object 1520
Object Decompilation 1518
XML data stream 1522
XML message 1524
XML data stream 1522
Object Compilation 1512
Java Object 1520

Fig. 34

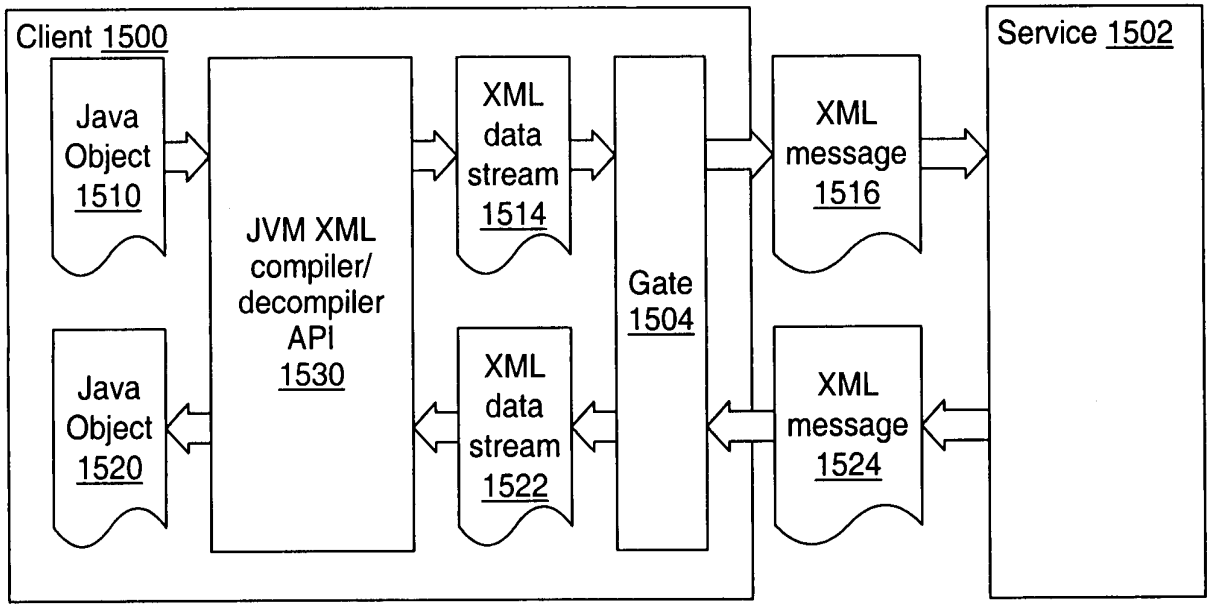


Fig. 35a

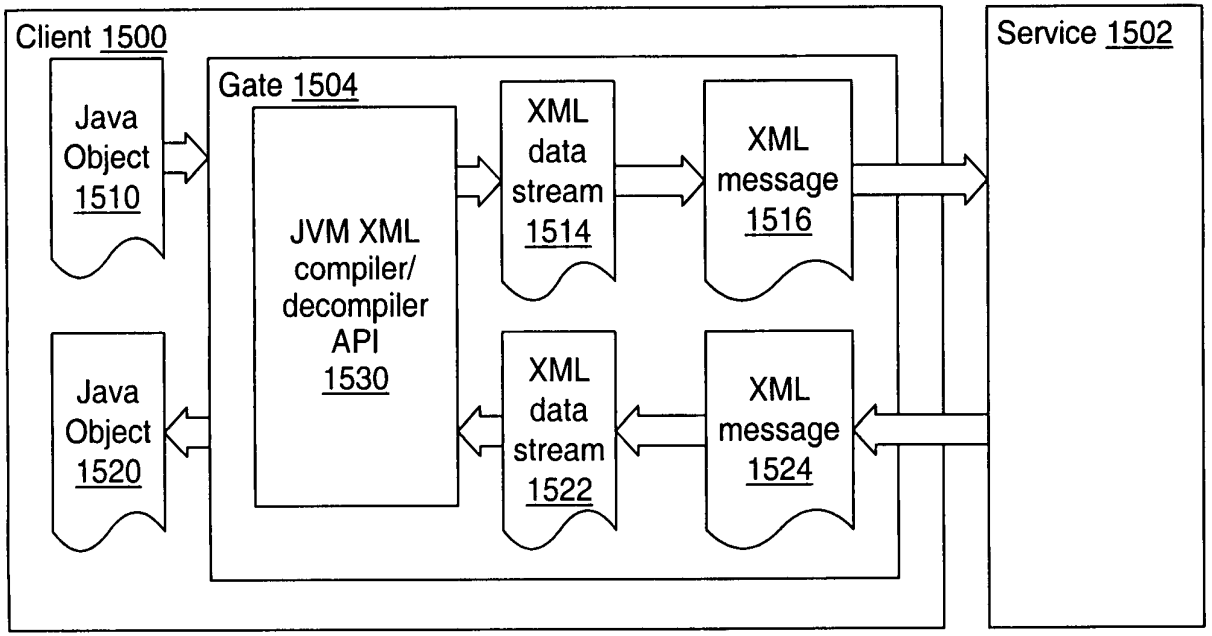


Fig. 35b

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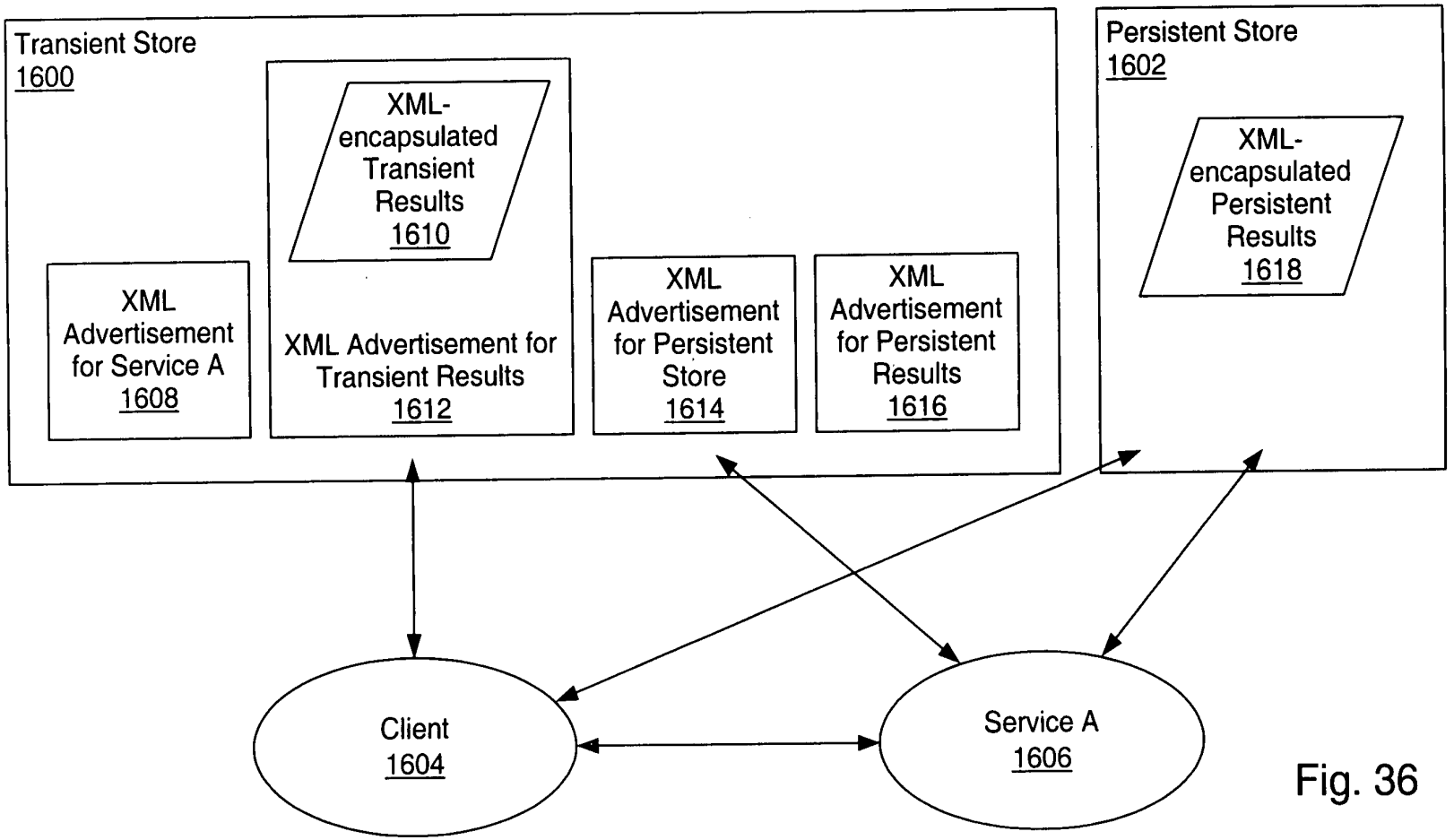

Fig. 36

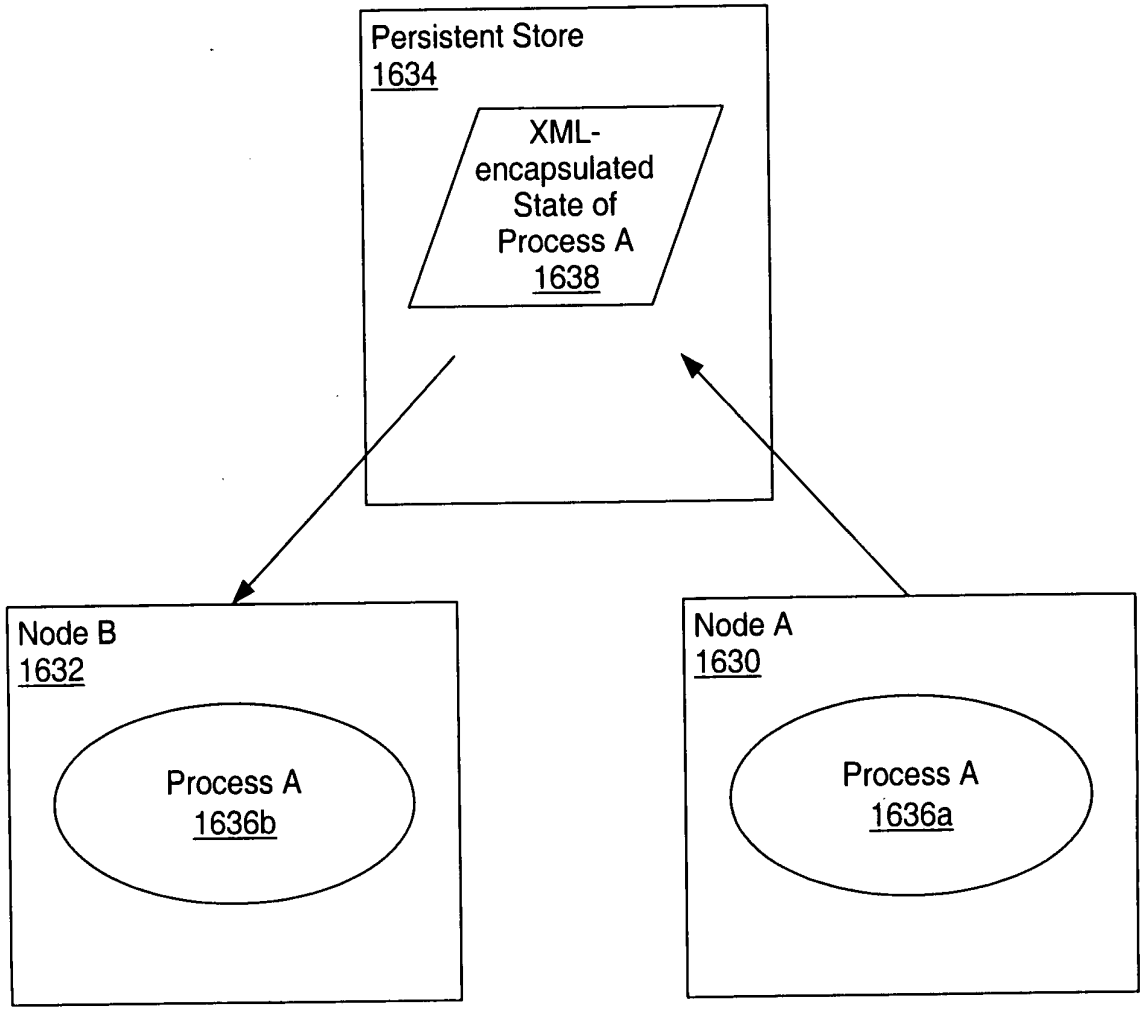
Persistent Store
1634
XML-encapsulated State of Process A
1638
Node B
1632
Process A
1636b
Node A
1630
Process A
1636a

Fig. 37

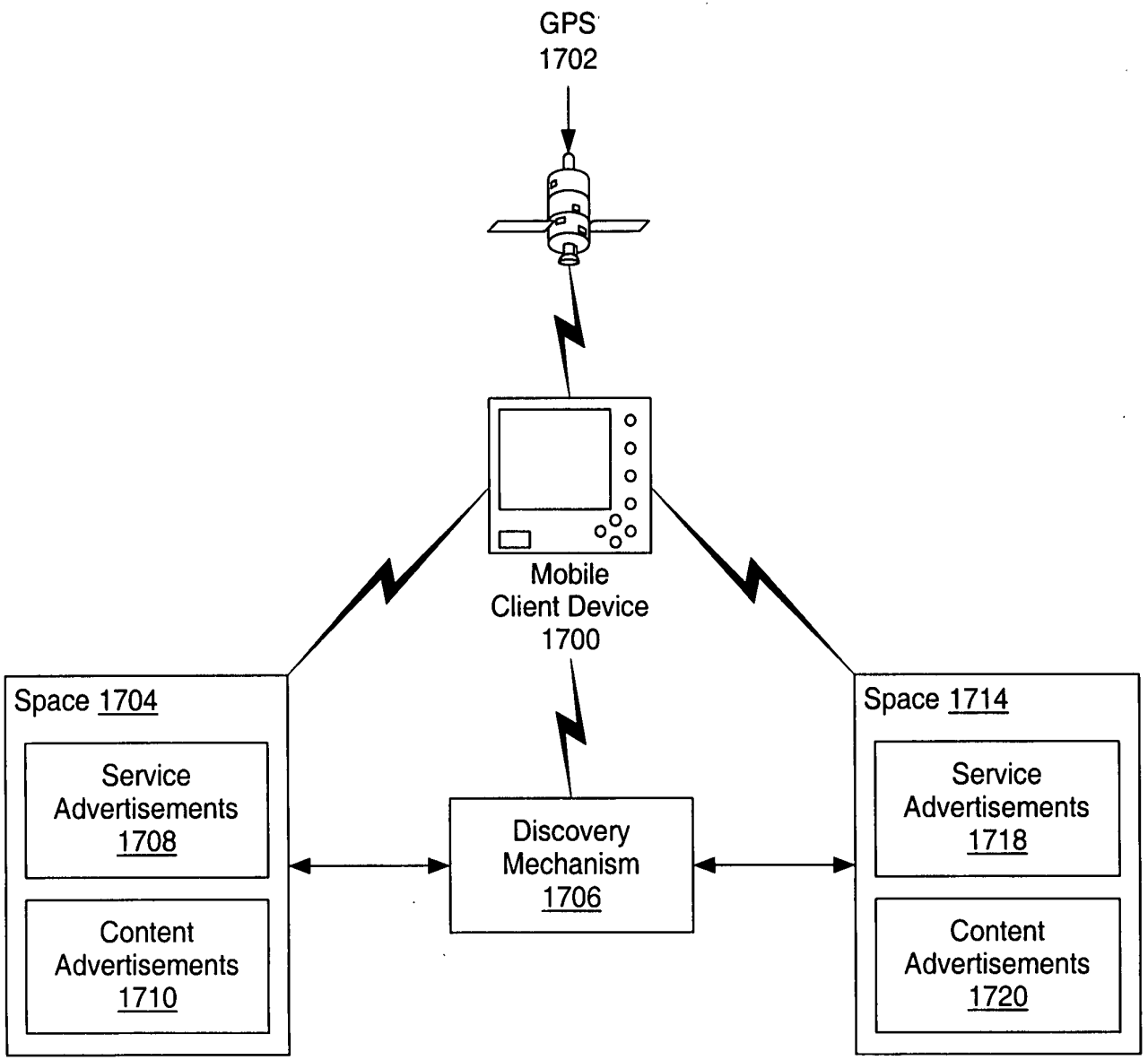
GPS
1702
Mobile
Client Device
1700
Space 1704
Service
Advertisements
1708
Content
Advertisements
1710
Discovery
Mechanism
1706
Space 1714
Service
Advertisements
1718
Content
Advertisements
1720

Fig. 38

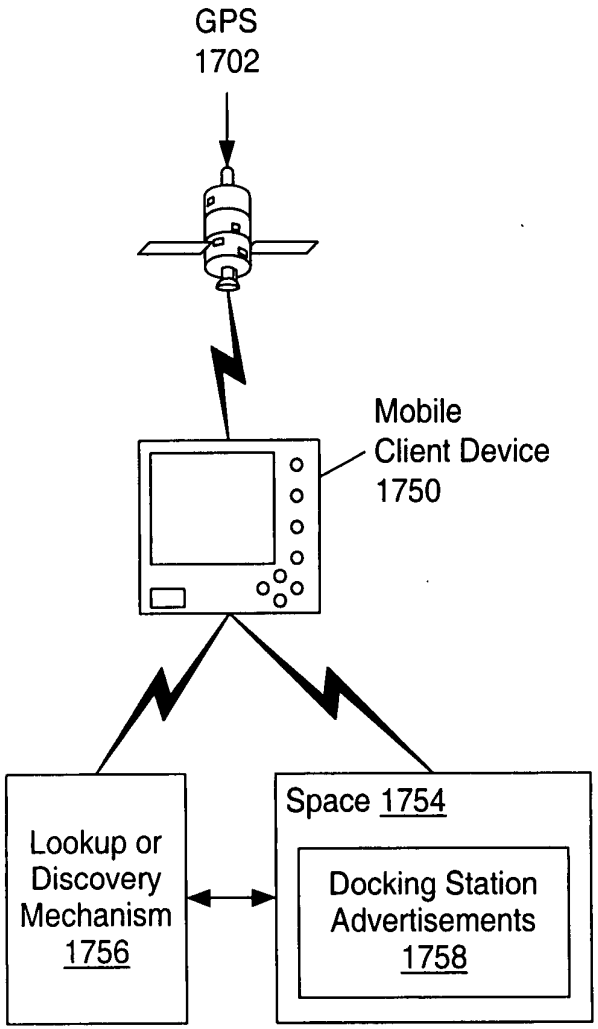

Fig. 39a

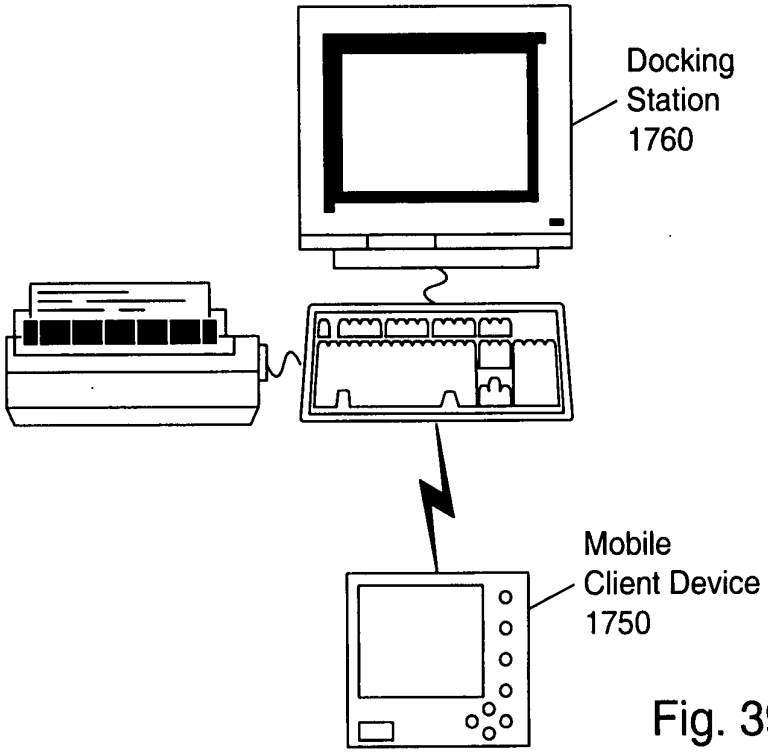

Fig. 39b

006TOT" T89E6960

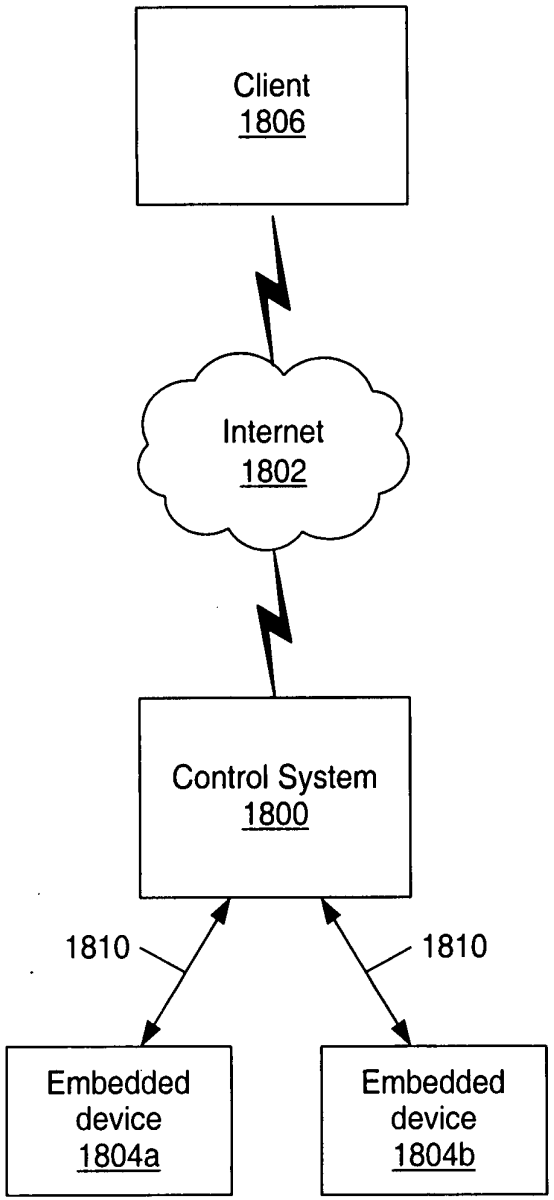

Fig. 40a

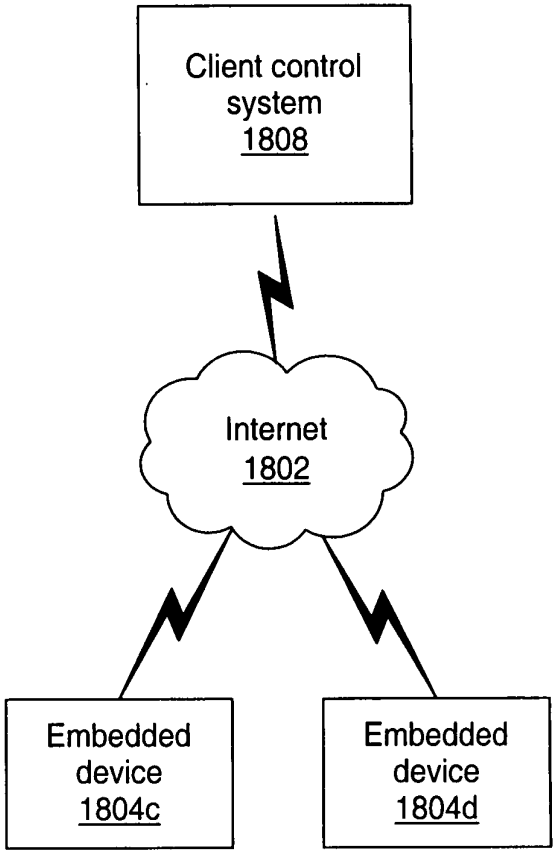

Fig. 40b

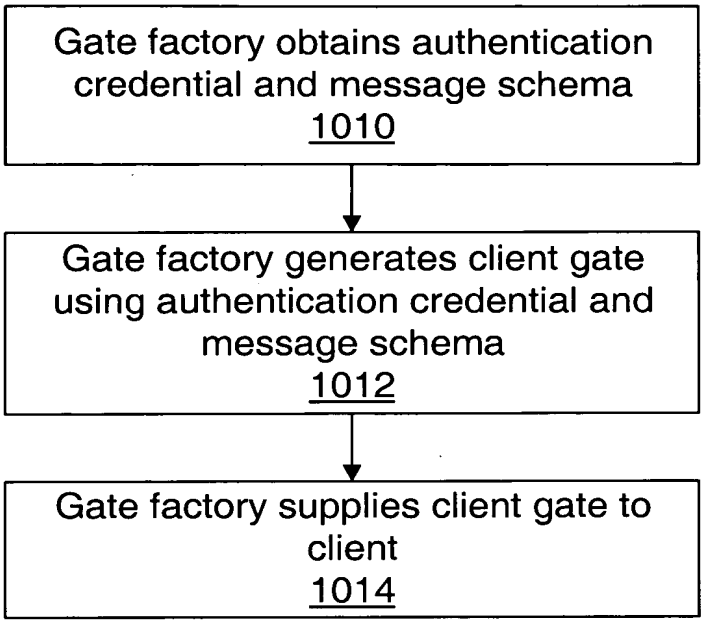

FIG. 41

0050-1050-0000

0054-0704-0000

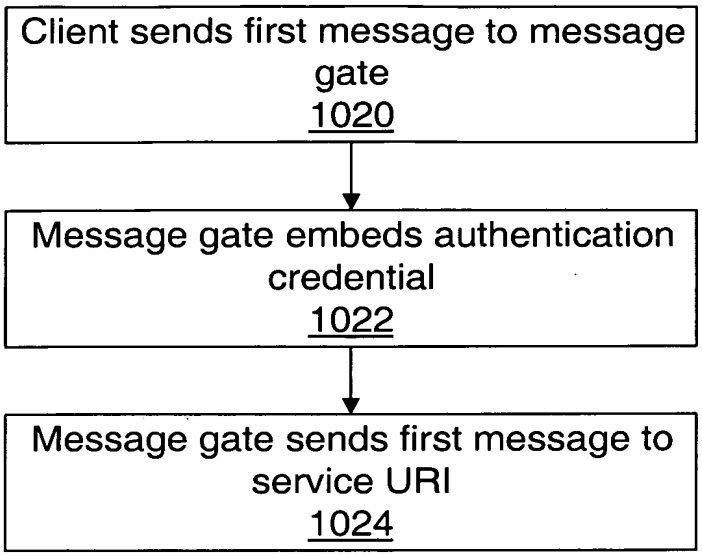

FIG. 42a

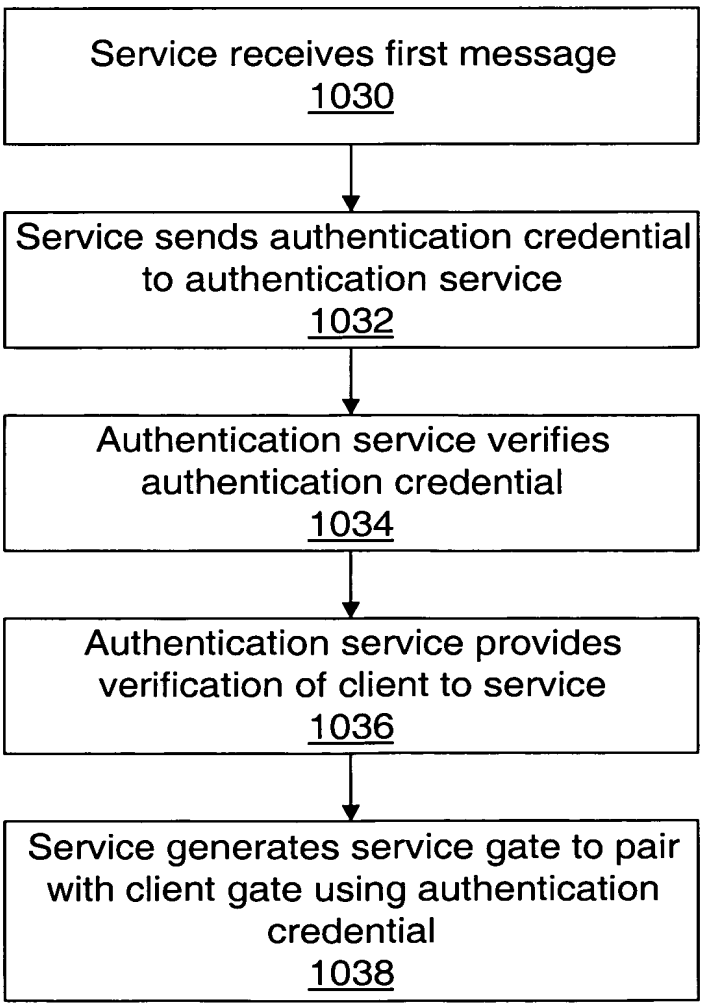

FIG. 42b

0960-1047-9950

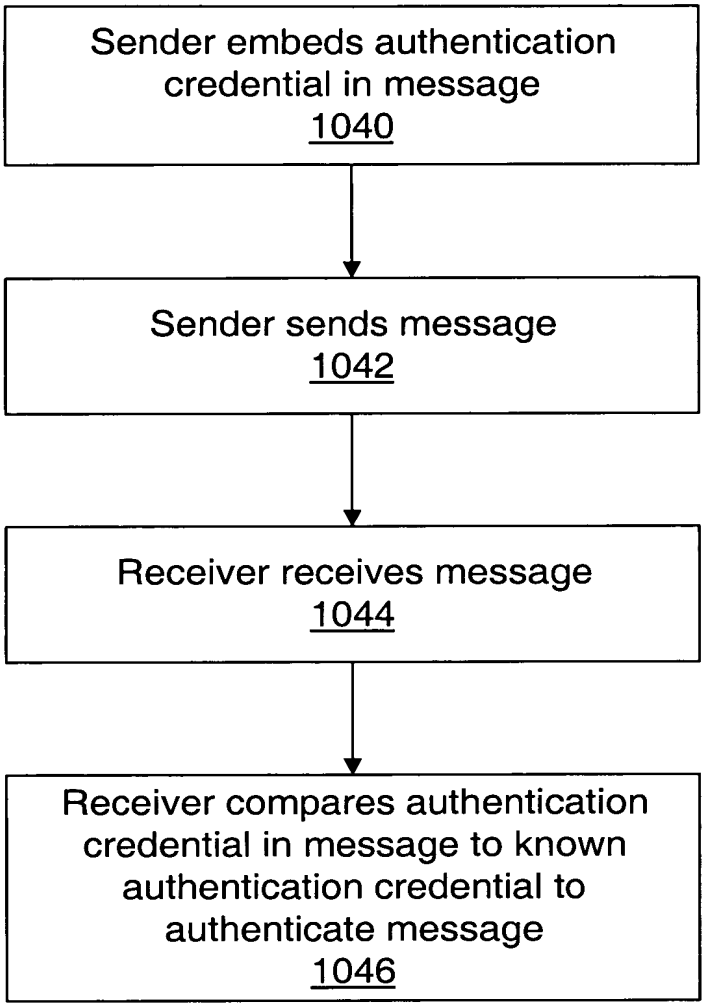

FIG. 42c

DOCKET NO. 3050

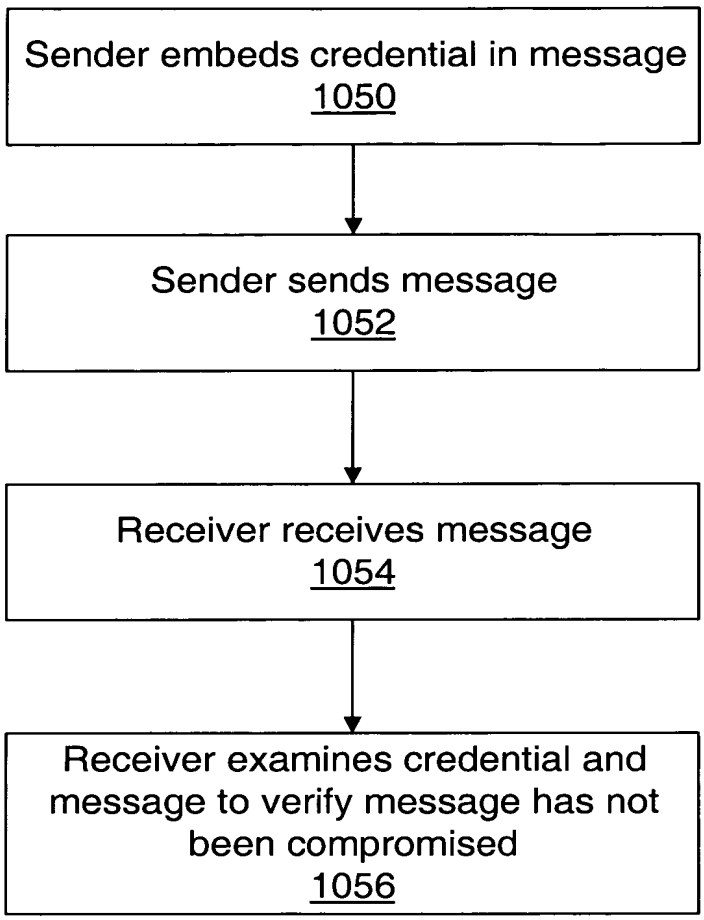

FIG. 43

Docket No. 3560.1010

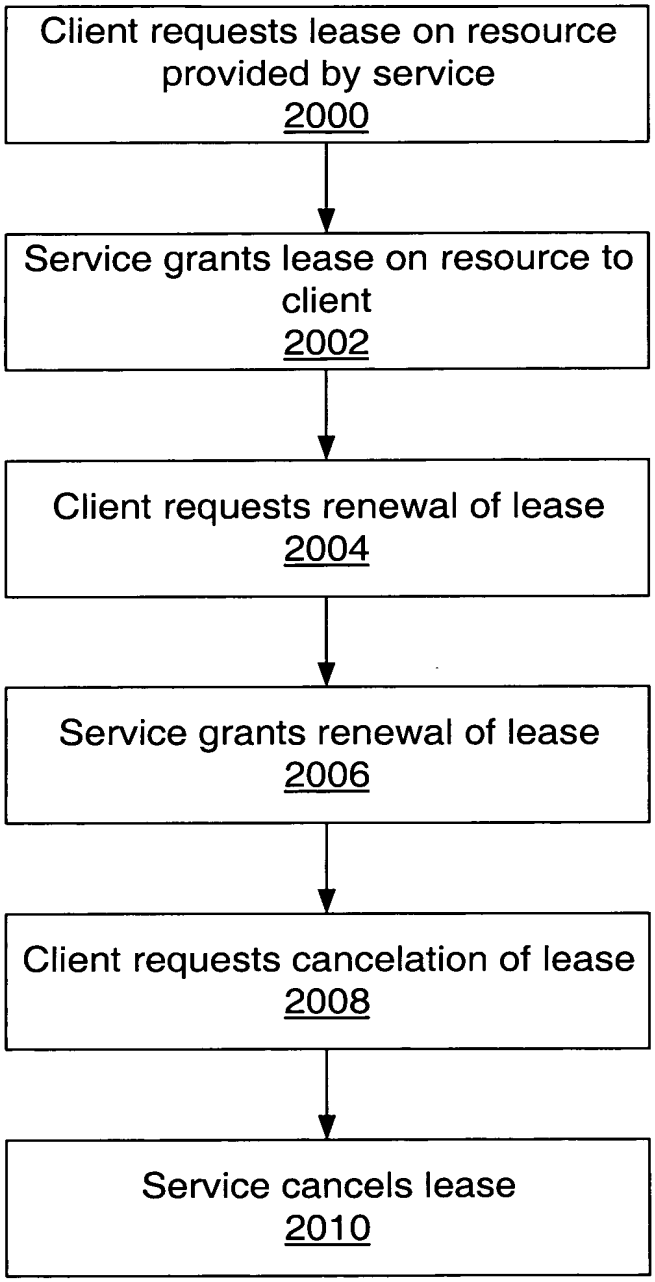

FIG. 44

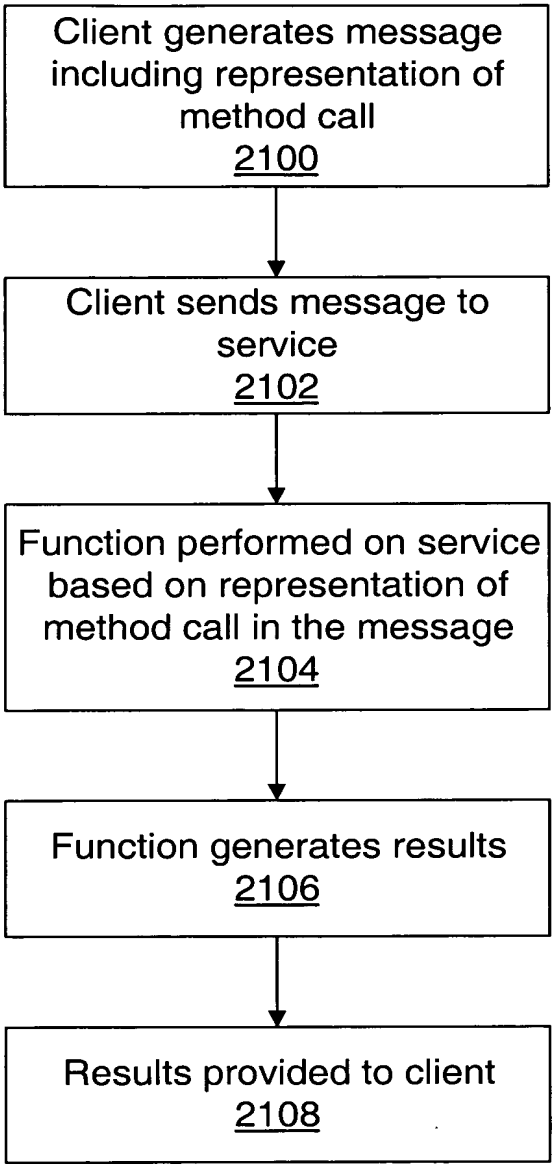
Client generates message including representation of method call
2100
Client sends message to service
2102
Function performed on service based on representation of method call in the message
2104
Function generates results
2106
Results provided to client
2108

Figure 45a

0056-1T-8956

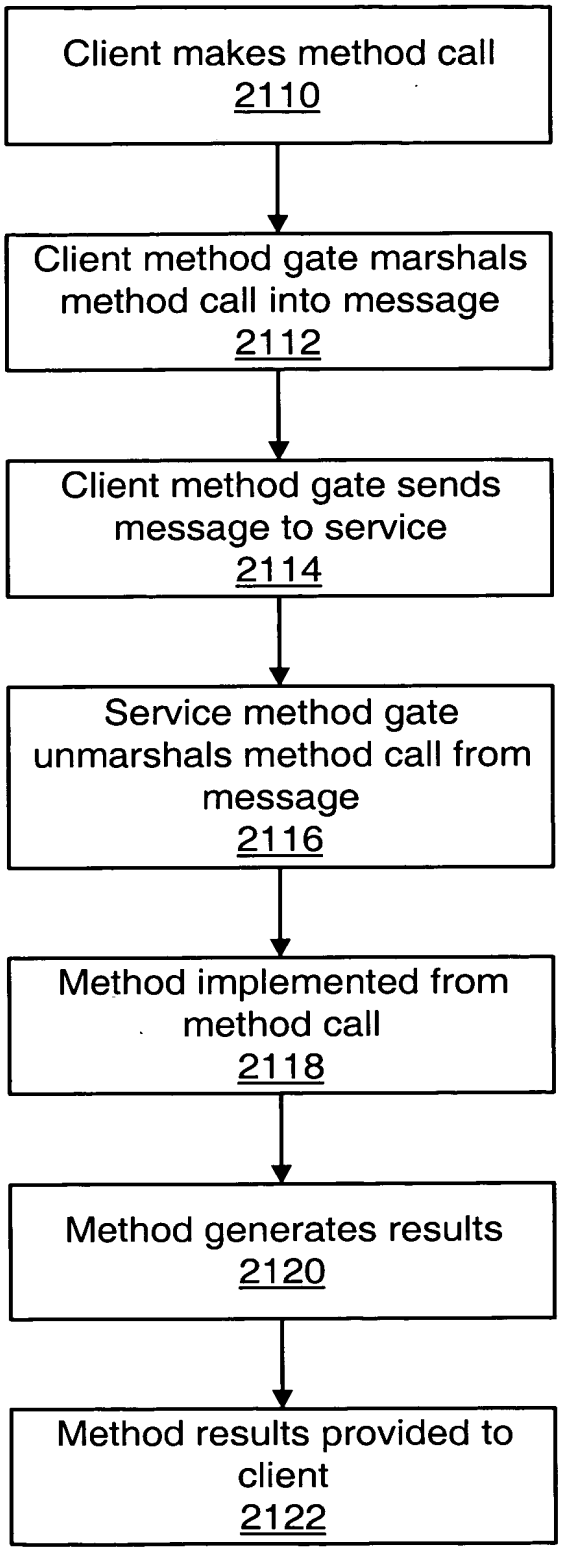

Figure 45b

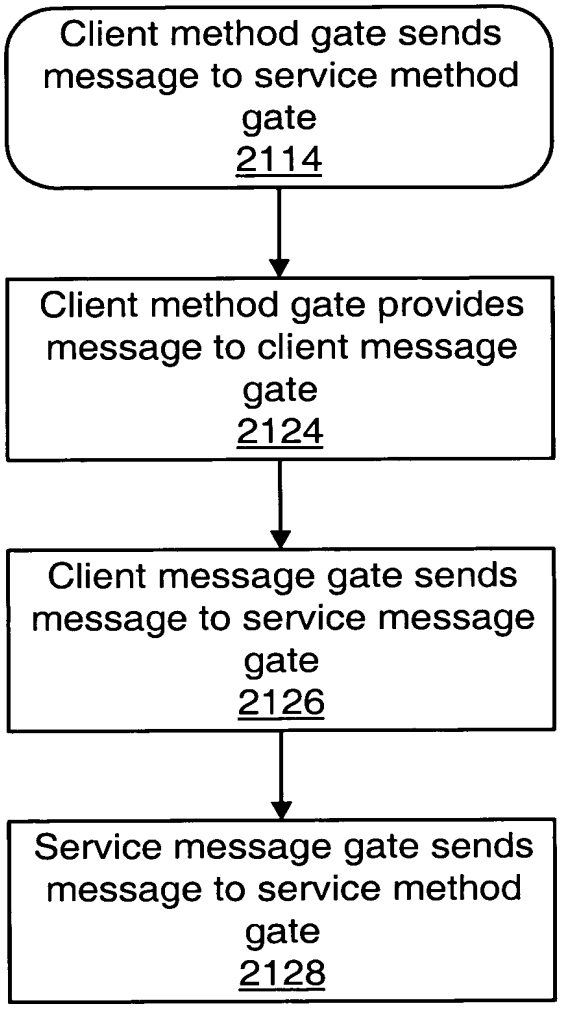

Figure 45c

0054-4004-0950

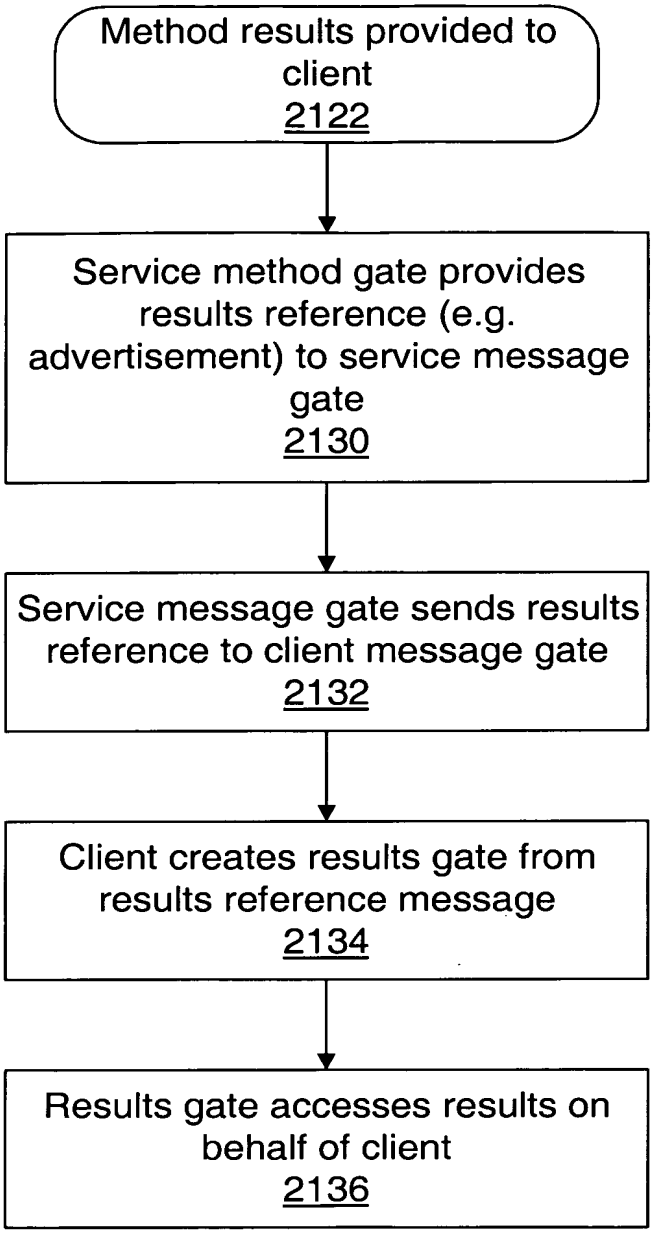

Figure 45d

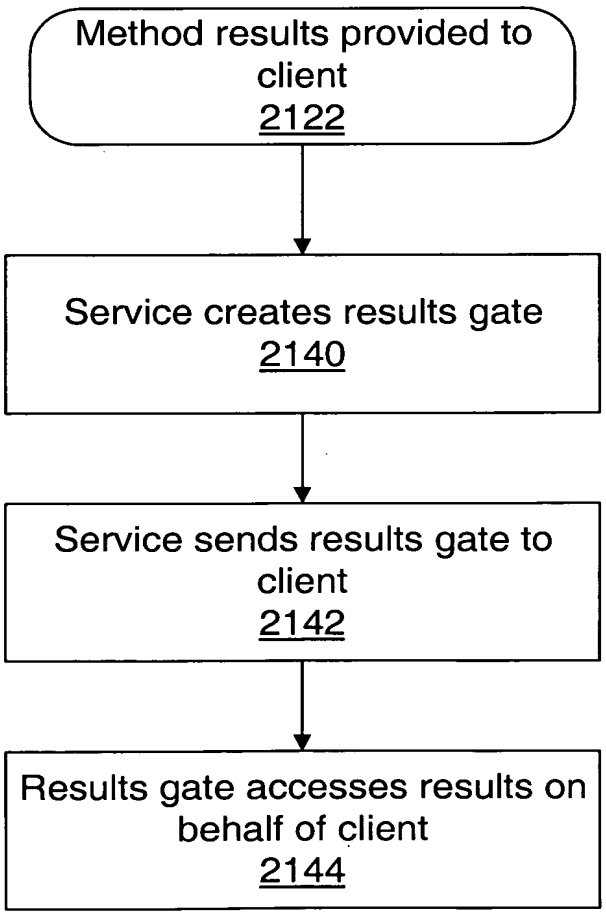

Figure 45e

0503681-120900

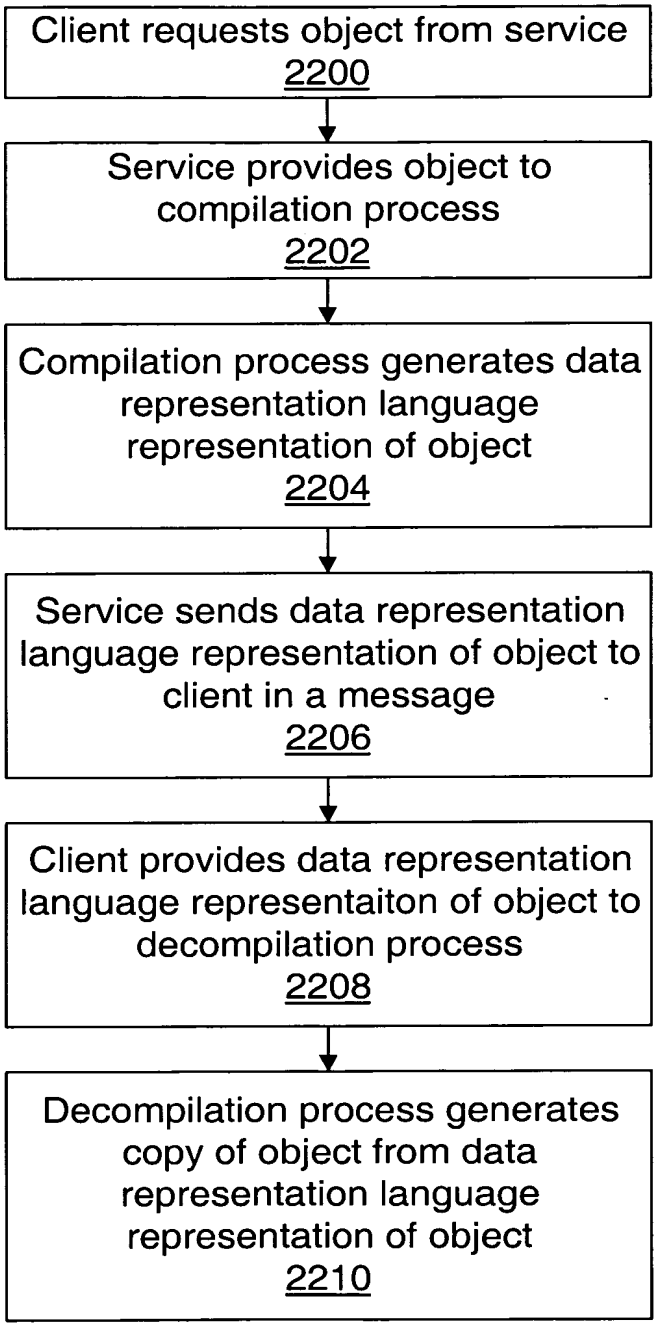

Figure 46

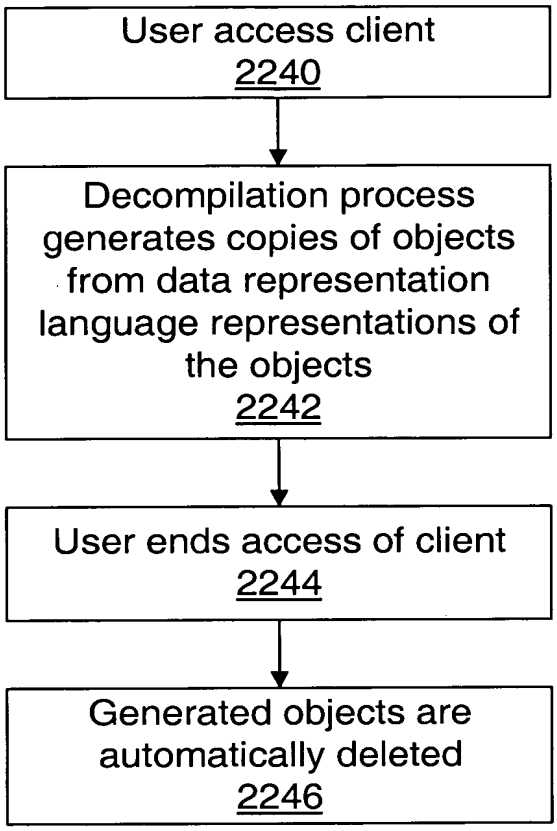

Figure 47

Docket No. 50277-1408

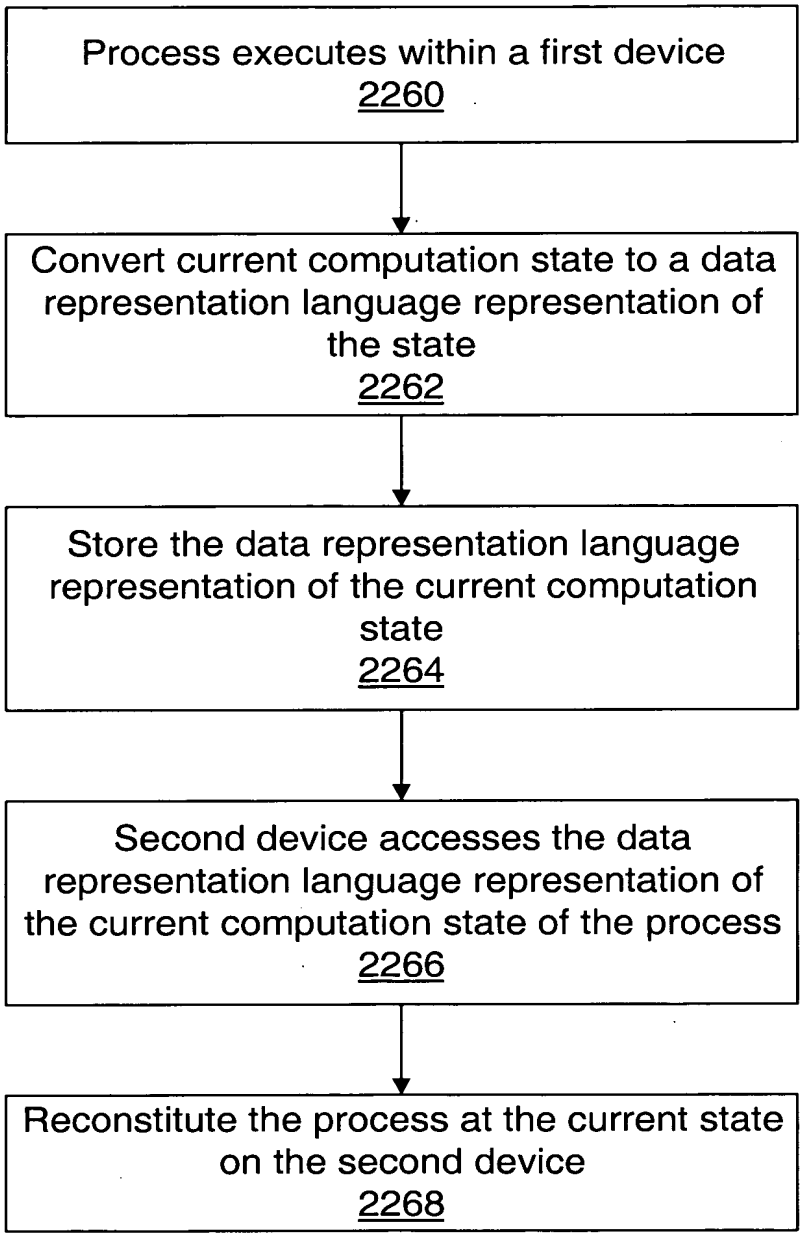
Process executes within a first device
2260
Convert current computation state to a data representation language representation of the state
2262
Store the data representation language representation of the current computation state
2264
Second device accesses the data representation language representation of the current computation state of the process
2266
Reconstitute the process at the current state on the second device
2268

Figure 48

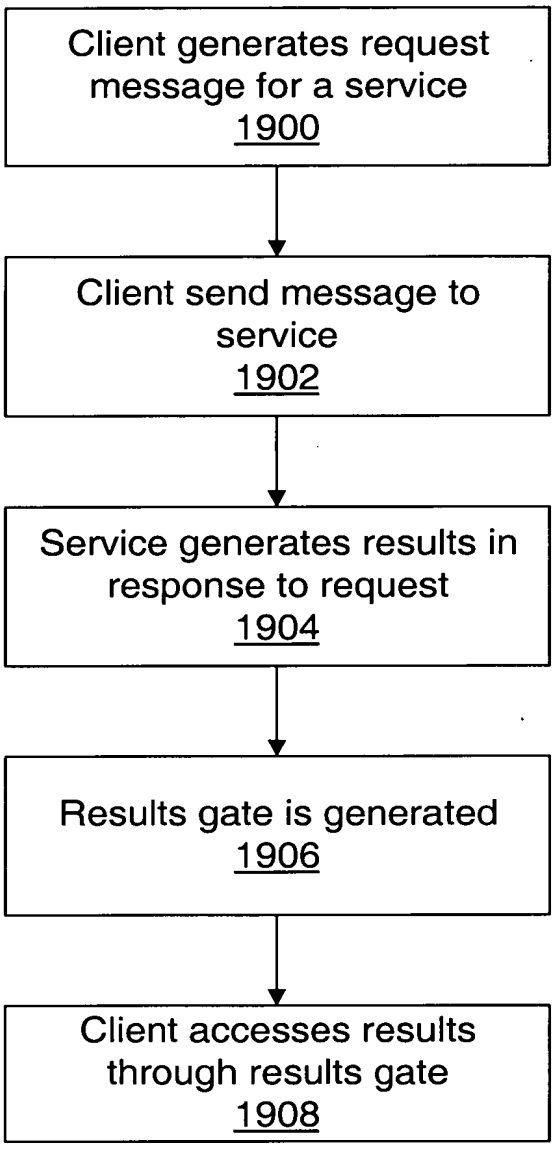

Figure 49

D05936 T-05050